THE ARCHITECT & BUILDING NEWS

24 JUNE 1959 VOL. 215 NO. 25 ONE SHILLING WEEKLY

- **BRITISH ARCHITECTS' CONFERENCE REPORT**
- **HOLLAND HOUSE AND EXETER UNIVERSITY**
- **INFORMATION DIGEST**

PUBLISHED IN LONDON SINCE 1854

Hull: Heinz new office and warehouse

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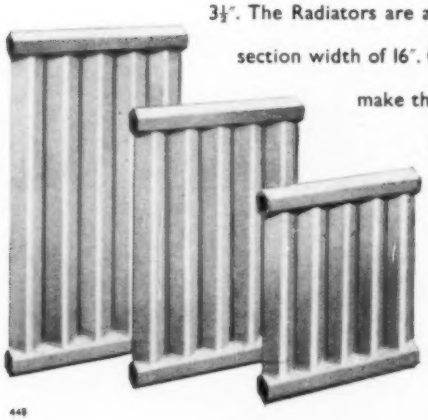

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Adipic acid
Alum
Ammonium chloride
Ammonium nitrate
Amyl chloride
Aniline
Aqua regia
Arsenic acid
Barium chloride
Benzaldehyde
Benzene
Benzoic Acid
Borax
Boric acid
Bromic acid
Bromine, liquid
Bromine water
Butanol
Butyl acetate
Butyric acid
Calcium hypochlorite
Calcium nitrate
Carbonic acid
Carbon disulfide
Carbon tetrachloride
Chloracetic acid
Chlorine gas, wet, dry
Chlorine water
Chlorobenzene
Chloroform
Chlorosulfonic acid
Chromic acid
Citric acid
Cresol
Cupric sulfate
Cyclohexanol
Dichloroethane
Ethyl acetate
Ethyl alcohol
Ethyl chloride
Ethyl ether
Ethylene bromide
Ferric chloride (sat.)
Ferrous sulfate
Formaldehyde
Furfural
Hydrobromic acid
Hydrochloric acid
Hydrogen peroxide
Hydrogen sulfide
Iodine
Kerosene
Lauryl chloride
Lead acetate
Magnesium chloride
Magnesium hydroxide
Malic acid
Mercuric chloride
Mercury
Methyl alcohol
Methyl chloride
Methyl ethyl ketone
Methylene chloride
Milk of lime
Naphtha
Naphthalene
Nickel chloride
Nitric acid (all conc.)
Nitrobenzene
Oleum
Oxalic acid
Perchloric acid
Phenol
Potassium salts
Propyl alcohol
Silver nitrate
Sodium bromide
Sodium chloride
Sodium hypochlorite
Sodium nitrate
Sodium sulfate
Sulfur dioxide
Sulfuric acid (all conc.)
Sulfurous acid
Tannic acid
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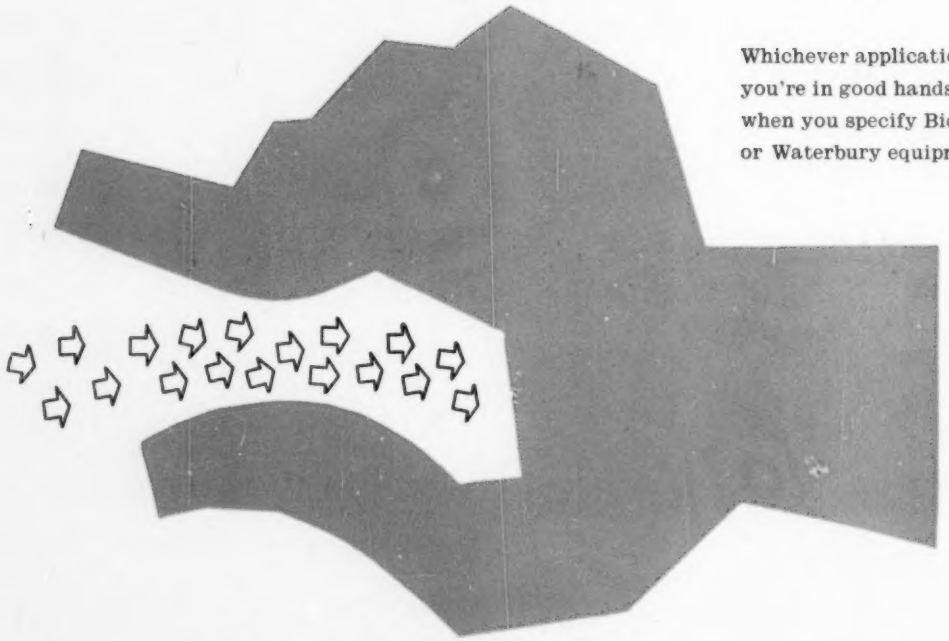

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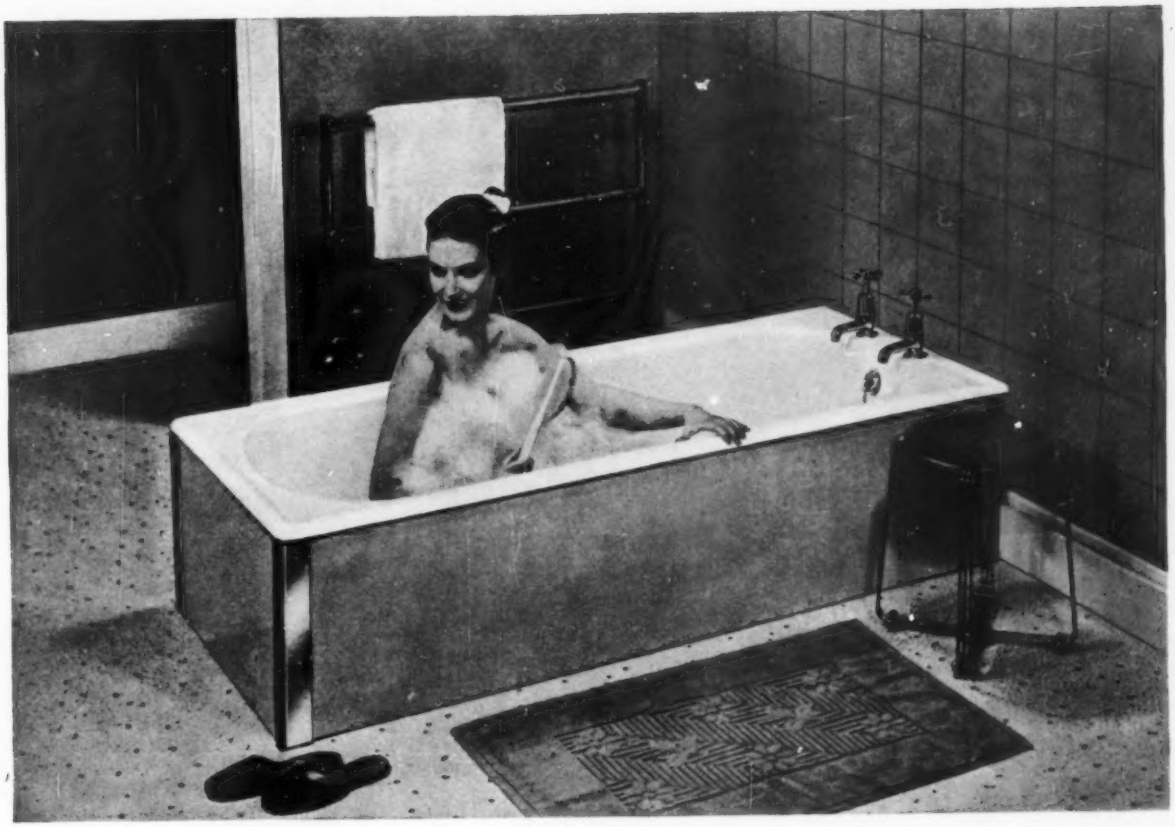

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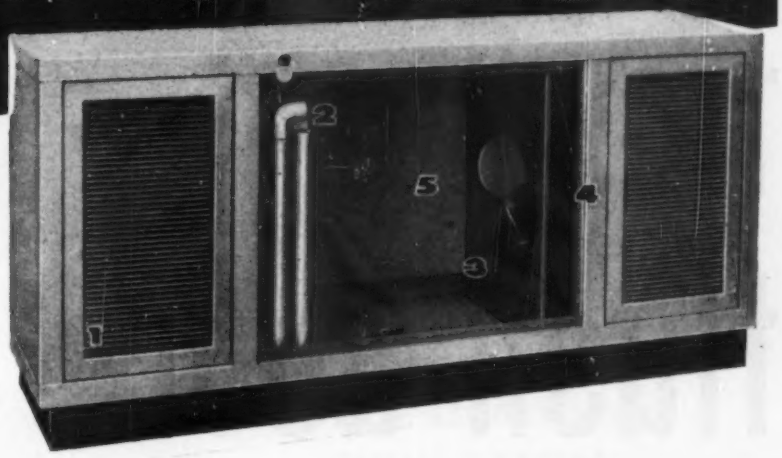

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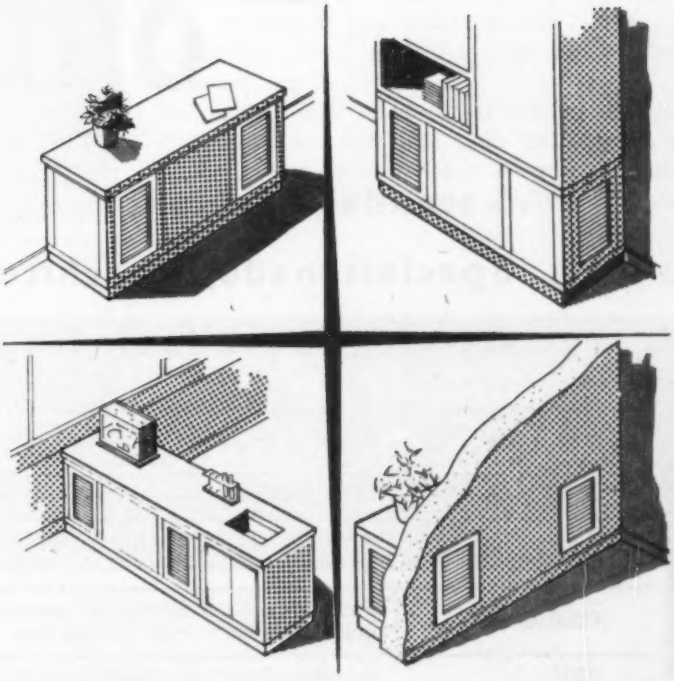

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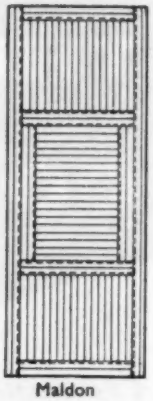

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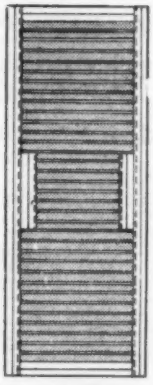

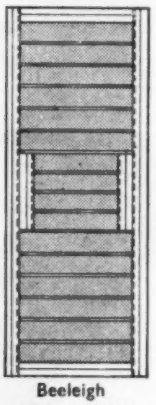

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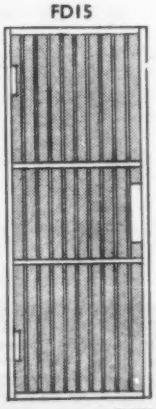

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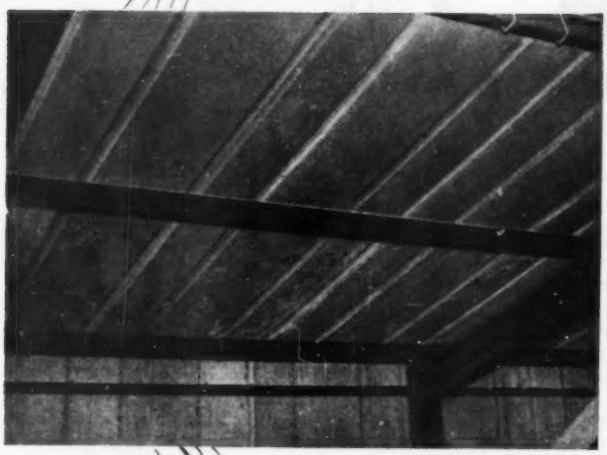

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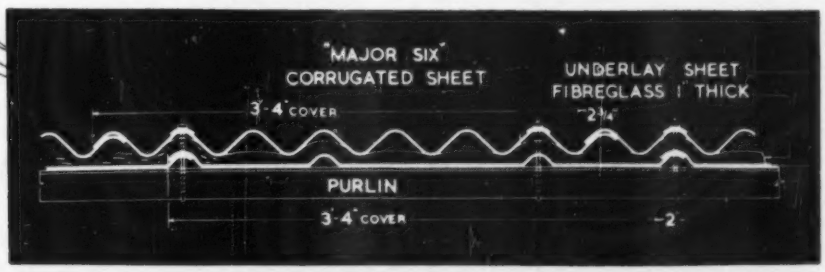

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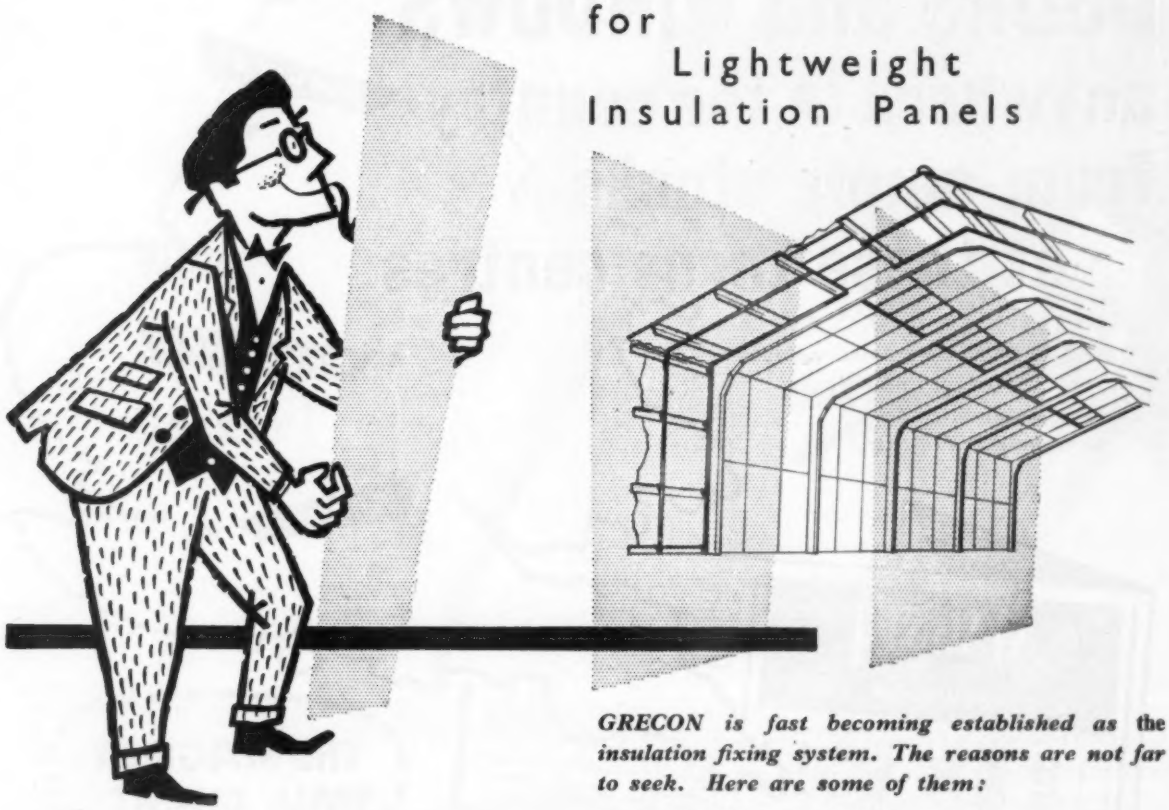

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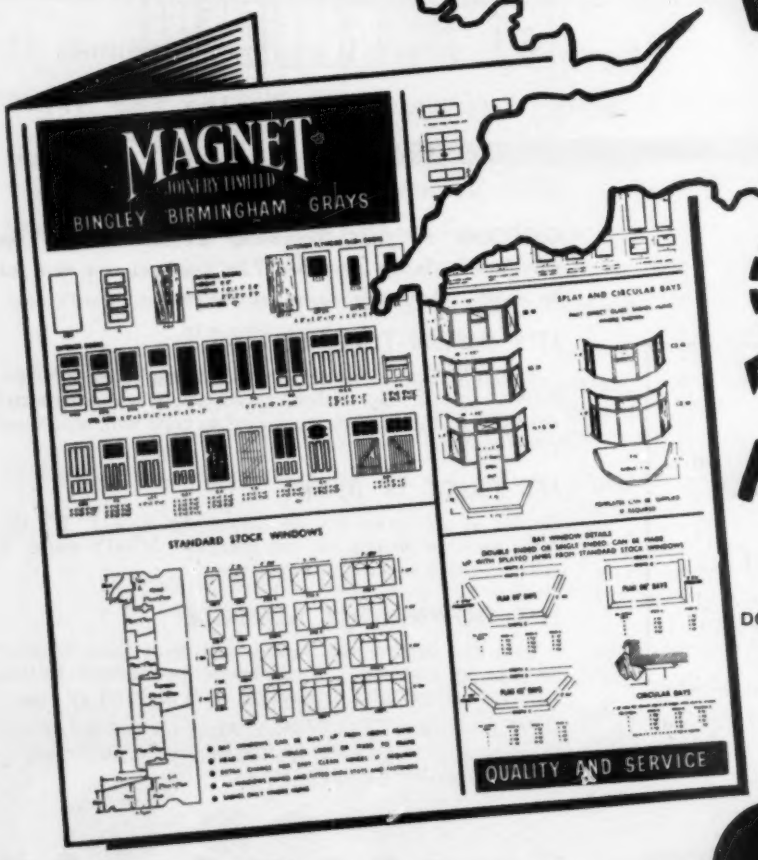

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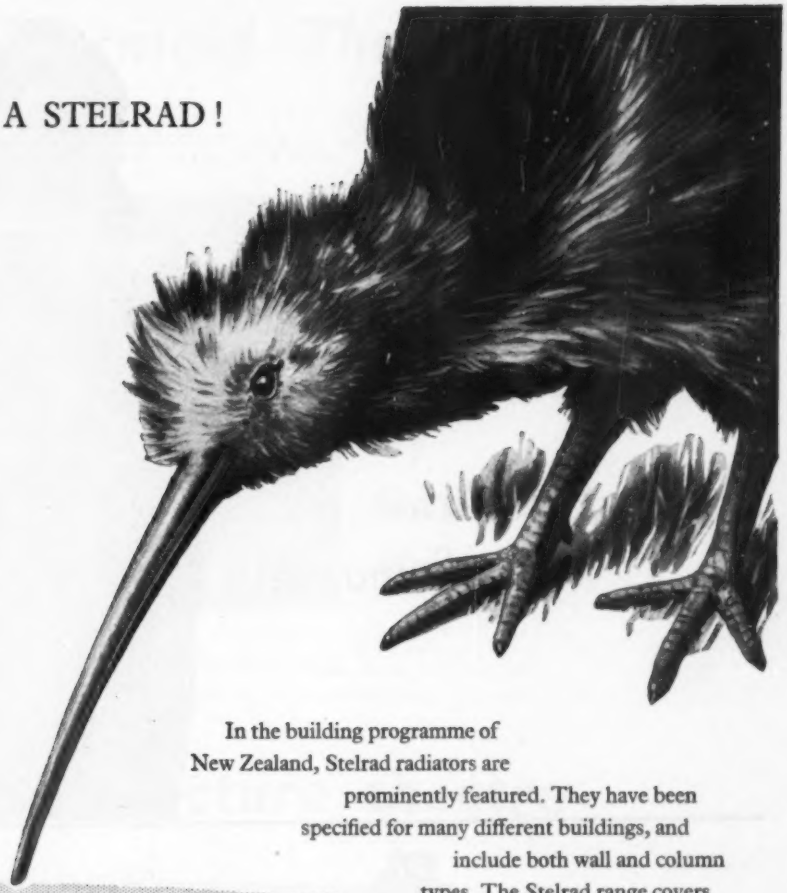

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MC60

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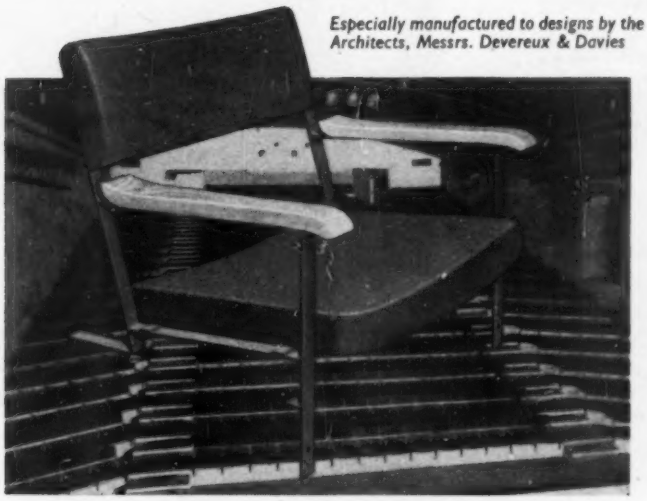

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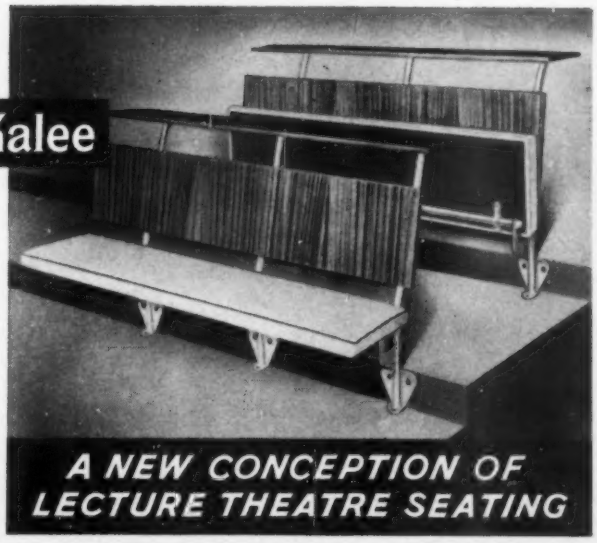

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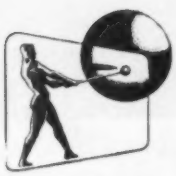

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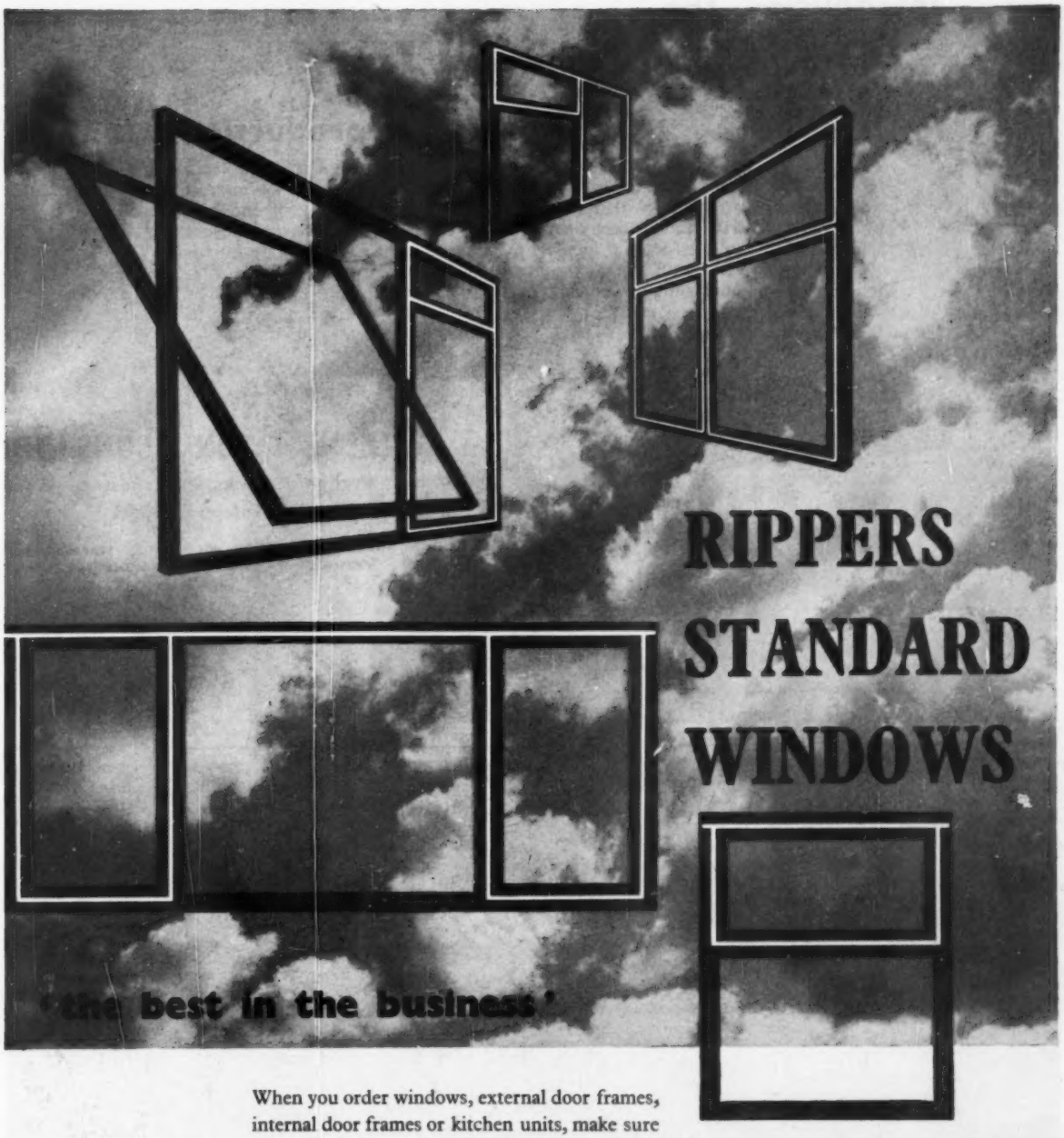

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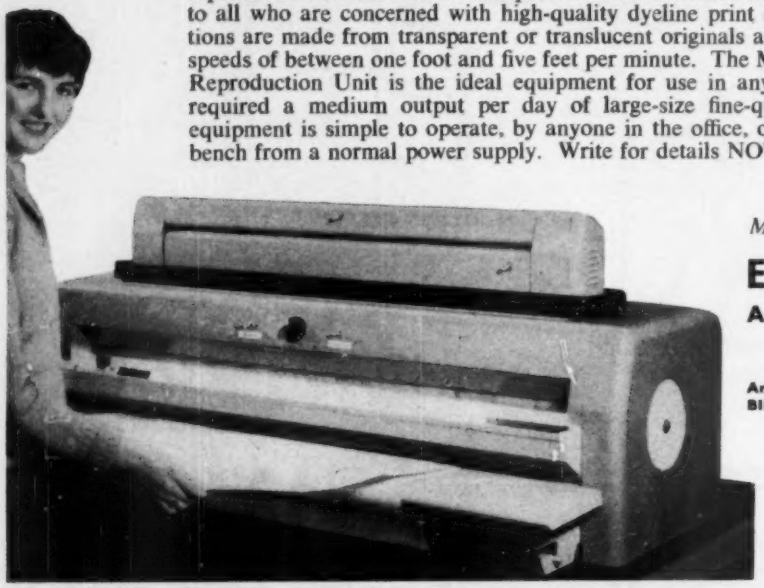

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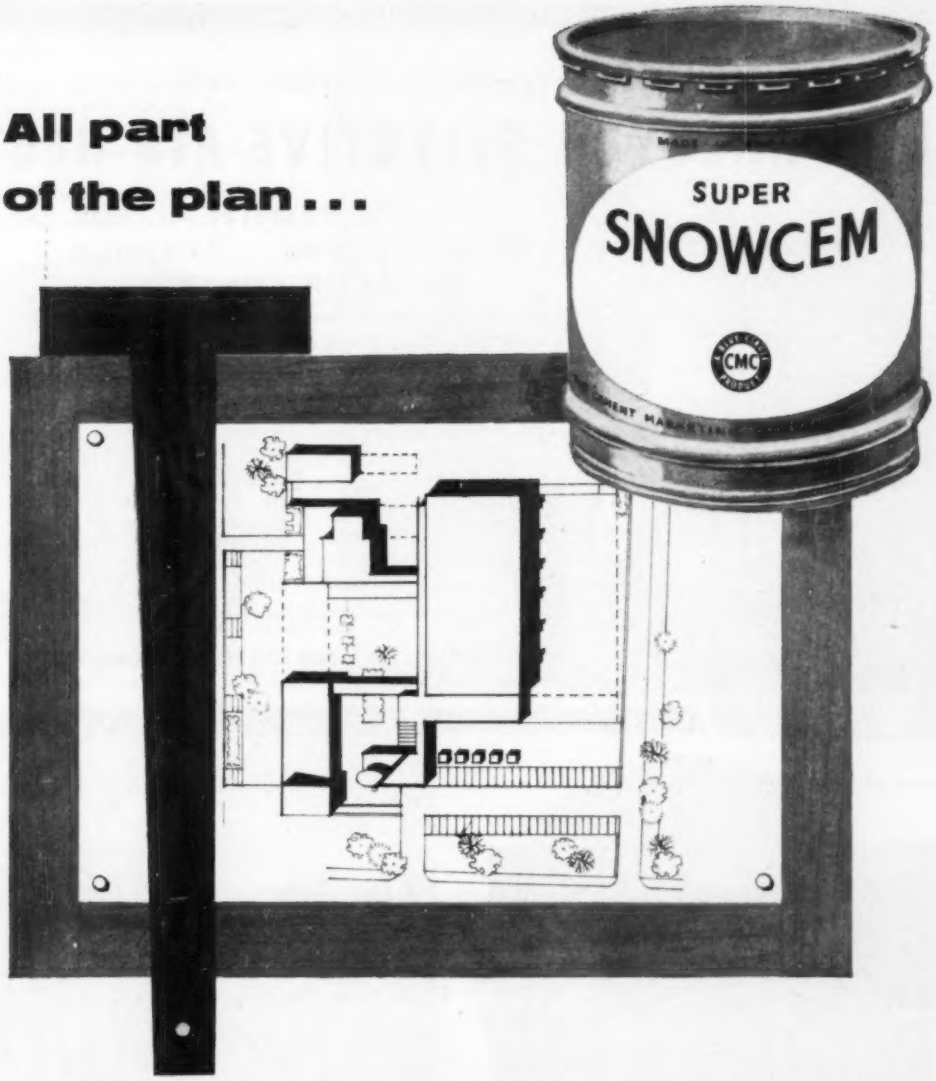

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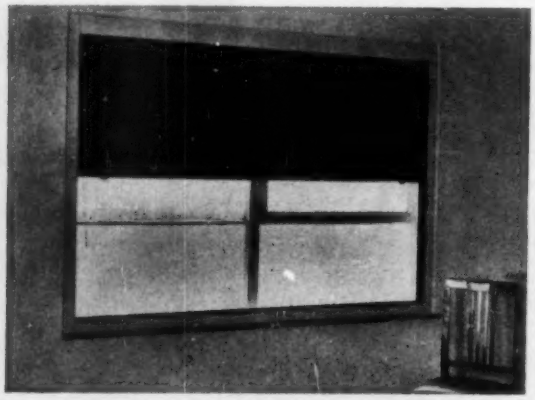

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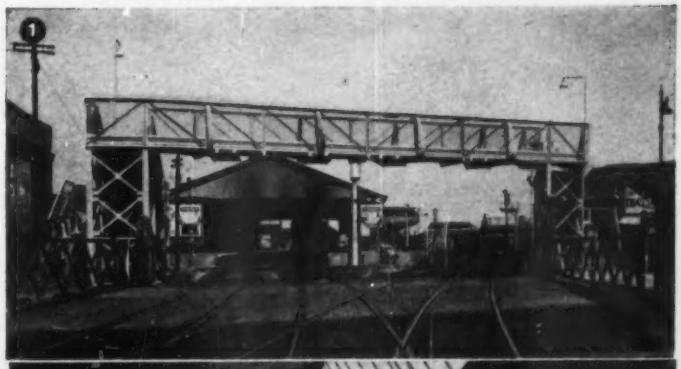

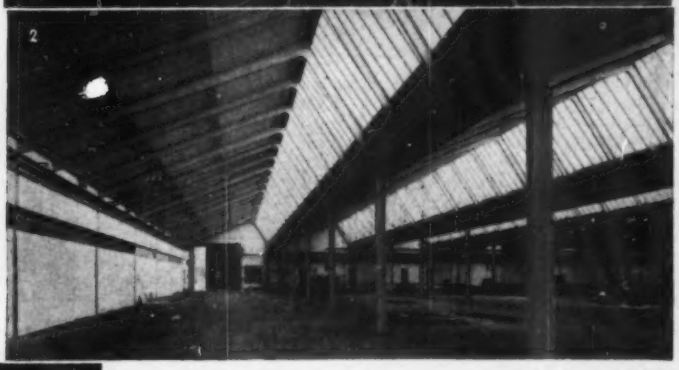

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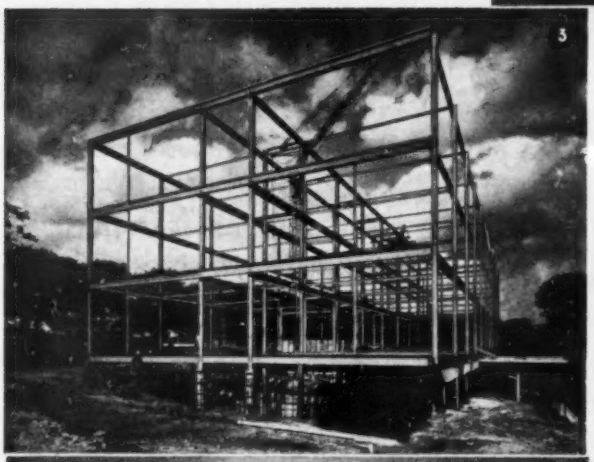

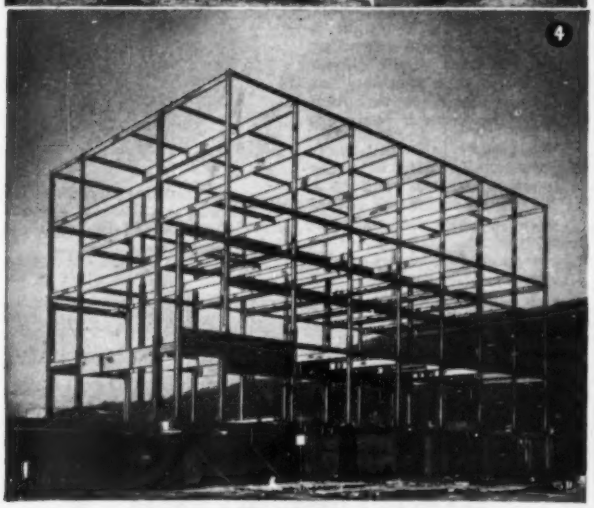

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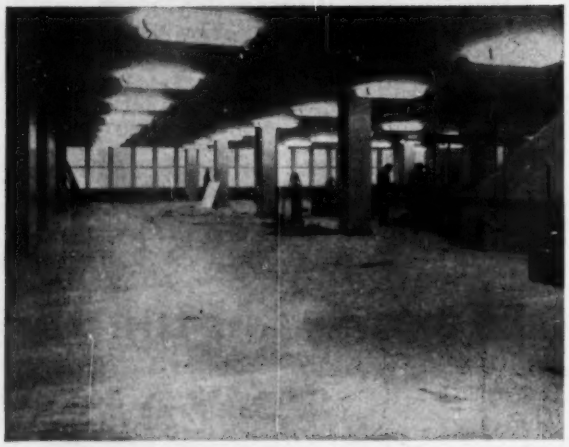

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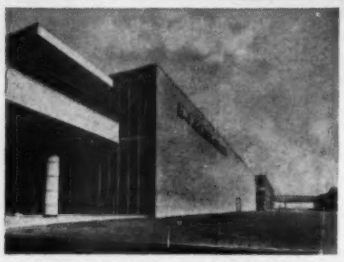

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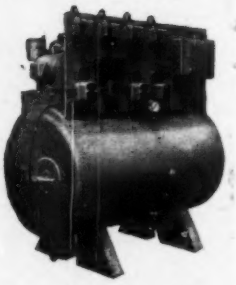

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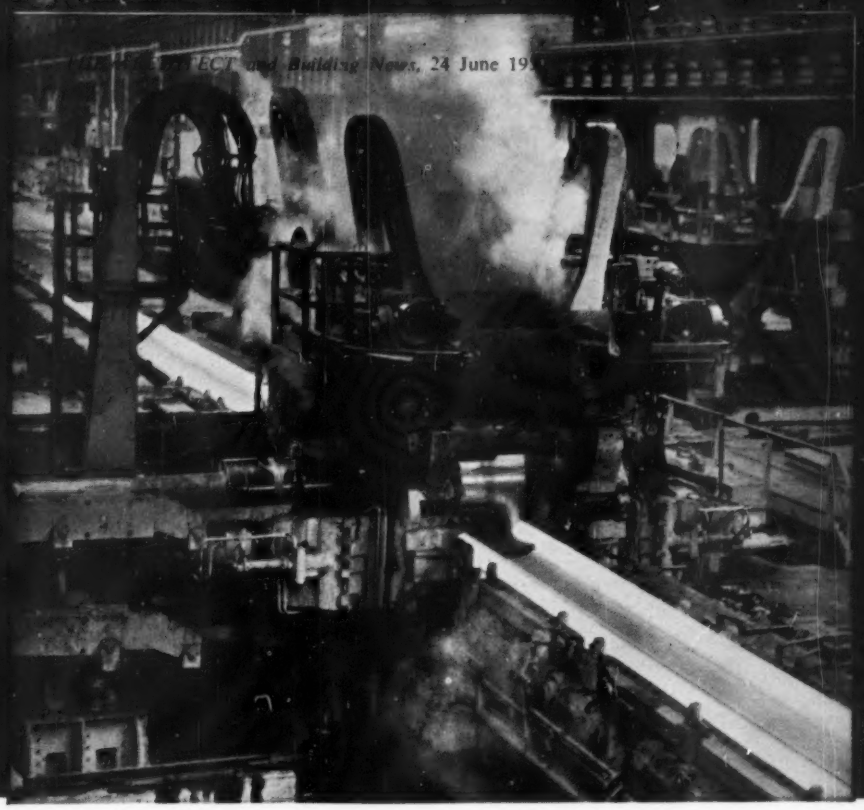

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The photograph of the Catterick bridge (shown at right), by courtesy of R. Sawtell Esq., A.M.I.C.E., County Surveyor, North Riding, Yorkshire C.C.

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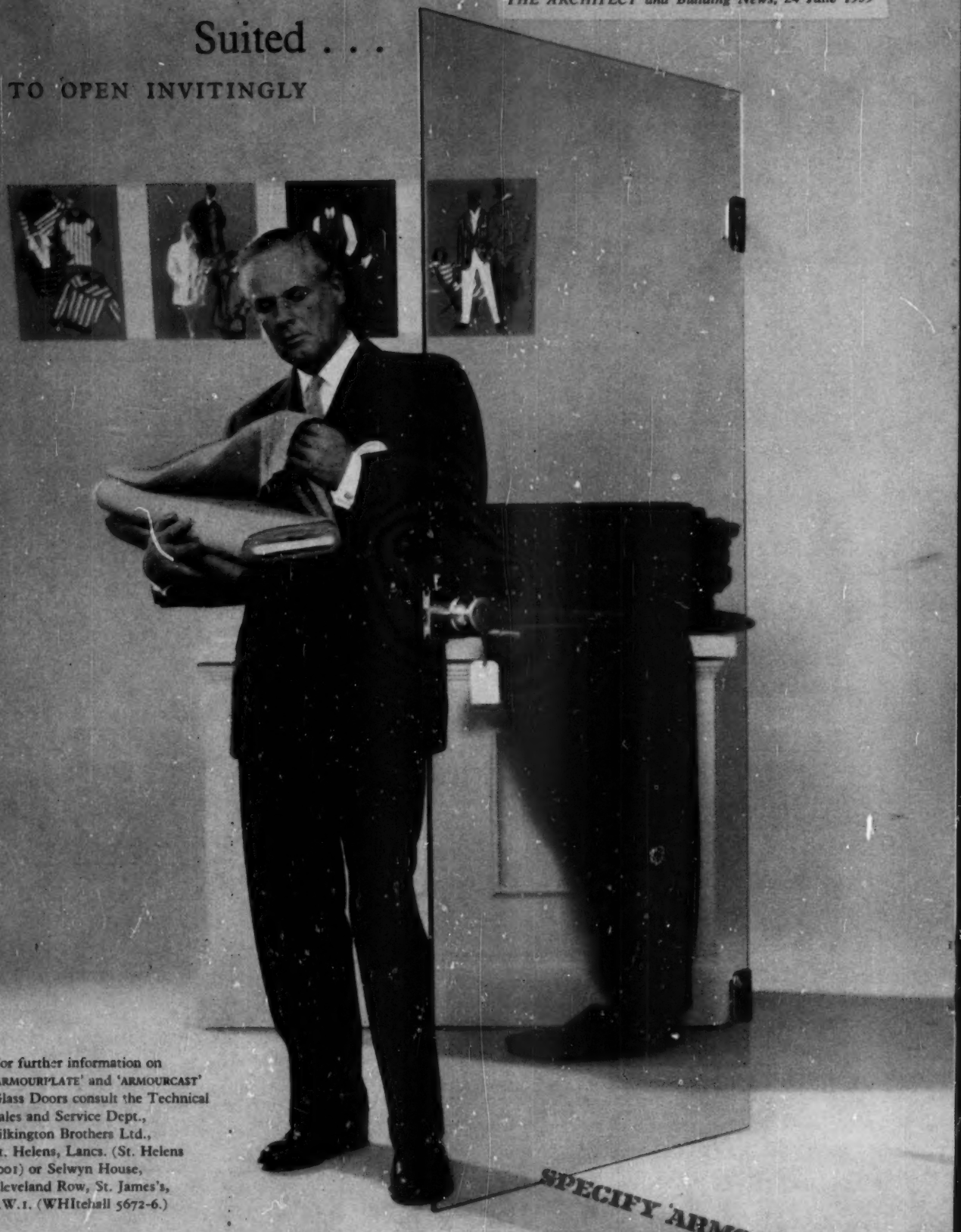

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Vol. 215 No. 25

THE ARCHITECT & BUILDING NEWS

24 June 1959

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The City Hall, Cardiff, with A.A. direction sign pointing the way for Conference members. Most of the evening social functions were held at the City Hall. The conference is reported on the following pages, 810-817

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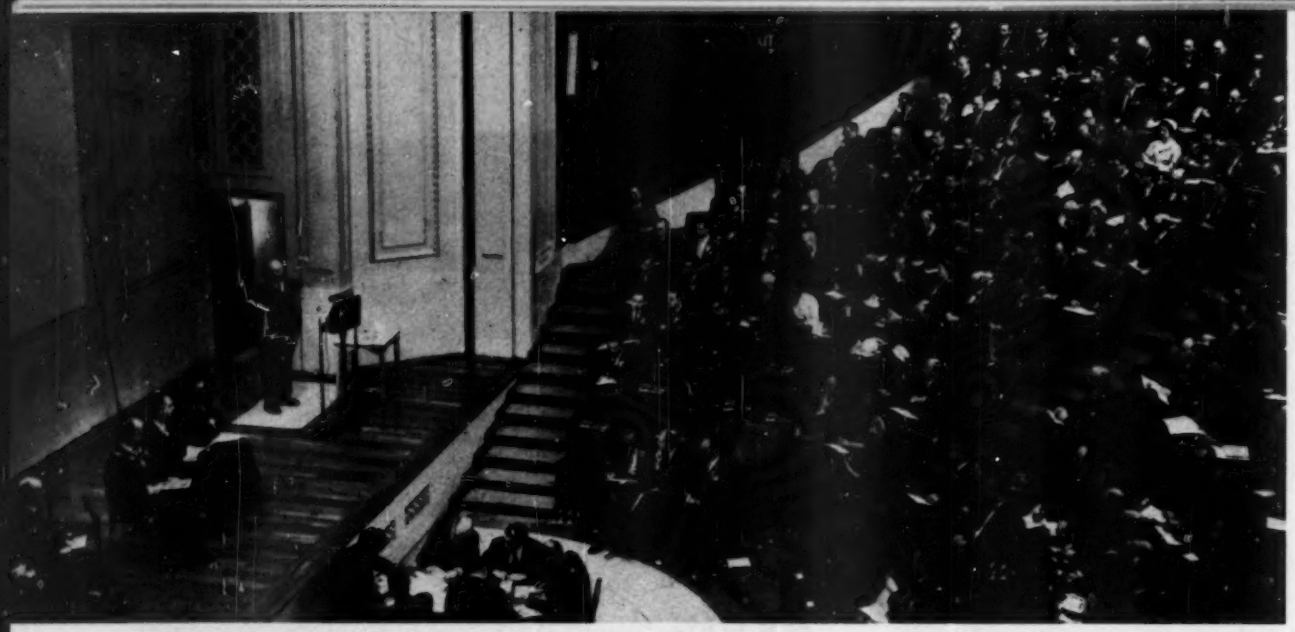

A view of the Reardon Smith lecture theatre during the first day's session. Sir Thomas Bennett is speaking. On the platform (left to right) are: Alick Low, C. A. Hughes, Basil Spence, C. D. Spragg and A. G. Sheppard Fidler

Conference Events

BENEATH overcast skies, forecast of unsettled weather, some 650 delegates (mostly from local authorities; about half wives, private practitioners and official representatives) converged on Cardiff last Wednesday week for the annual three-day British Architects' Conference, last held in the city in 1922.

Yellow A.A. signs guided delegates to Cathays Park Civic Centre to collect, at the City Hall, badges and handouts prepared by the conference hosts, the South Wales Institute of Architects.

The City Hall was the main venue for the evening social events; informal reception, civic reception and conference dinner were held there. As background material for conference members, the South Wales Institute had collected together a fine selection of photographs and models of building works in Wales since the Roman occupation. These were exhibited in the main anteroom to the festivities in the City Hall under the general exhibition title: "A Country Builds". This excellent arrangement enabled delegates plenty of time to look at the photographs in spite of a crowded programme.

◆ ◆ ◆

At Wednesday's informal reception delegates danced and renewed old acquaintances. There were no side shows (no Welsh folk dances?), but for the first time a press conference was held by the president, R.I.B.A., supported by the president, S.W.I.A., and the principal conference speakers. Regrettably, this was a press conference in name only. A carefully considered and crisply worded statement on which the press could ask questions was absent. A rambling discussion took place leading sometimes to disagreement among those who ought to have agreed something beforehand.

◆ ◆ ◆

The Reardon Smith lecture theatre is just round the corner from the City Hall, on the east side of the Welsh National Museum. Here, on Thursday morning, delegates gathered to listen to a charming speech of welcome from Cardiff's first lady Lord Mayor, Alderman Mrs. Helena Evans; the inaugural speech of the president, R.I.B.A., Basil Spence, and a short speech from the president, S.W.I.A., C. A. Hughes. The Lord Mayor hoped the conference would be happy and successful, and told delegates they represented one of the world's greatest professions to whom the public looked for achievement. The president thanked the Lord Mayor for the hospitality to come and wished John Dryburgh success in his appointment as the first city architect of Cardiff.

Discussion on the theme of the conference, "The Role of the Architect in Efficient Building", was opened by Sheppard Fidler, Birmingham city architect, and Alick Low, of Norman & Dawbarn, who were followed by a number of carefully "seeded" speakers (selector: Bill Allen), some of whose remarks are summarized below. The value of picking the speakers of the first morning was reflected in the lively discussion which continued after lunch when a study group (chairman: Bill Allen) met for three-quarters of an hour to discuss the programme.

◆ ◆ ◆

Rain threatened but did not fall at the garden party at St. Fagan's Castle, home of the Welsh Folk Museum. Besides the formal and informal gardens of the castle there was much else for the delegates to look at: the Abernodwydd and Kennixston farmhouses with their whitewashed walls and thatched roofs; the intimate Penthiw chapel; weaving and woolmaking (one could examine tenter hooks—the real thing). A small section of the proposed museum block contains furnished rooms of great interest; but the exterior brickwork of this building is ugly and out of character with its surroundings.

◆ ◆ ◆

The second day's proceedings in the Reardon Hall opened with some messages of hearty greetings from the American Institute of Architects, the New York Chapter of the American Institute of Architects and the New York Society of Architects, delivered by Mr. Geoffrey E. Aronin, New York architect, attending the conference. The president also welcomed Mr. Snodgrass, of Johannesburgh, and Mr. Zettel, of Brazil. The president then told the conference that as a result of the Study Group's deliberations, the morning's discussion would be divided into three main parts: first, organization in the small office, then the large office, finally the external problems, relating partly to specialists and sub-contractors. The discussion then continued in lively fashion. Points from each speaker's remarks are reported below.

◆ ◆ ◆

The conference dinner took place at the City Hall on the Friday evening. There were eight official speeches and two informal. This dragged out the proceedings. Most of the speeches were worth listening to, but restrictions on space this week precludes a report of them here. The speakers were: A. G. Sheppard Fidler, vice-president, R.I.B.A.; Lord Brecon, Minister of State for Welsh

Continued on page 817

CARDIFF CONFERENCE DISCUSSION

Below is a short account of the British Architects' Conference discussion at Cardiff on June 11-12 with speakers' points

Basil Spence, president R.I.B.A. and C. A. Hughes, president S.W.I.A.

A. G. SHEPPARD FIDLER explained that the main purpose of his paper (A. & B.N., June 10, 1959) was to comment briefly on aspects of the architect and efficiency, more especially from the official architect's point of view. He commented on some points of special importance: (1) Official practice enjoys the advantage of an assumed programme of work and gains considerable specialist knowledge in design problems involved in certain fields, e.g., housing and schools. This results in greatly helping efficiency. (2) Client's instructions are usually passed to the architect by the chief officer concerned (thus: chief fire officer for fire stations; welfare officer for old persons' homes) who are very conversant with requirements. (3) For projects breaking new ground, a first-class information service, such as is now under discussion at the R.I.B.A., is required. (4) A knowledge of building costs is essential. (5) The official architect ought to be aware of structural developments and costs of alternative materials. He referred to the R.I.B.A. review of timetables for 300 jobs which showed that the average design time for a project was 18 months, ranging from 13 months for the average factory to 26 for a public building. Both official and private architects had to meet the challenge of the "packaged deal" which had a low average design time. "The challenge is", said Mr. Fidler, "how can design time be reduced?"

ALICK LOW then read his paper:

SIR THOMAS BENNETT referred first to the contract architects carry out with the public at large. He said: There has been a sort of revolution in building since we have arrived at an age of steel, reinforced concrete, heating, ventilation and acoustics. All sorts of mechanical equipment have now become an essential part of building. Many people have said that the task should be one for a team of people, working, presumably, together in one office. That, I think, is largely a fallacy. It is not possible to have such a team, at any rate to a greater extent than is represented by the conductor of an orchestra and the players of individual instruments.

The members of the particular professions concerned with their own little piece of the story have, in my experience, an extremely woolly view of the precise things that really matter to the client. With the greatest difficulty do I get an exact comparison of the cost of running a heating scheme with solid fuel, oil, electricity and gas. With the greatest difficulty do I get a structural engineer who is a steel specialist to tell me that a building is one for which I ought to employ reinforced concrete, and the concrete specialist cannot bring himself to believe that there is any case in which he should use steel. I am becoming more and more convinced that the only man who can direct the contract with efficiency, whether for a public authority, an individual, a large company or a nationalized industry, and the only man who has the comprehensive knowledge to do so, is the architect himself, if efficiently trained.

We then have to face the question of how to acquire the knowledge which is needed for control of so diverse a series of technicalities as those involved in a large modern building. The architect cannot become a great calculator of steel and concrete or a great heating and ventilating engineer with a knowledge of all the ramifications and details involved. I think, however, that if we start in the school with a proper approach to architectural education, if we approach it with the consciousness that there is a portion of all this work which is within our own ability and which we can control, we shall arrive at a right appreciation of what the architect is expected by the efficient client to be able to do. Once the architect occupies that position, and can say, with a sufficiently broad knowledge of the principles, what he wants to see incorporated in his building, he will have acquired the confidence of the building public, and all this talk about package deals, specialist contractors and the rest of it will become complete and utter nonsense.

I am certain that if the architect really sets out to equip himself properly for this job he is better able to direct the method of constructing a building, and to know the right sort of questions to ask the specialists for his particular building, than any sectionalized engineer or building or contracting organization or any seller of a prefabricated article. We must of necessity have a large measure of knowledge to enable us to do this, but if we consider and decide exactly which branches of knowledge we can acquire we shall have begun the story which leads ultimately to the confidence of the public and the right responsibilities for ourselves.

Sir Thomas then examined the way in which this knowledge must be applied and used in offices of different shapes and sizes. In the largest type of official office, it is usual, he said, to have general purpose departments, under the architect's control, which deal with calculations of structural work and mechanical services and so on. On my own staff, he said, I have structural and electrical engineers, heating and ventilating, and plumbing engineers, in order to be sure that I have day-to-day advice of the right kind at the right moment. That does not say that when dealing with a building which is really complicated and involves difficult structural problems I do not go to one of the leading consultants in the country.

Then we have the fallacy, advertised very largely by the contractor, that the builder ought to be brought in at the early design stage of the building. I have never heard more utter nonsense. To bring in a contractor at the early design stages is to bring in a man who has no experience of design at that stage and who knows nothing about the imaginative laying down of plans and elevations and who will be entirely out of his element. It is different when you have stabilized the design plans and elevations and come to the elements of construction that you propose to use and come to something about which the builder ought to have some knowledge.

At the informal reception. In the centre, Graham Henderson and (left) Sir Percy Thomas, two former R.I.B.A. presidents, with their party

CARDIFF CONFERENCE DISCUSSION

J. AUSTIN-SMITH said he was going to be desperately dull and boring and give the delegates a lecture; in fact to explain what, in management circles, was meant by "Method Study", since this term was used by Gauldie and Wright to describe the excellent study which they did in their office. Mr. Austin-Smith then continued, with the help of slides, to analyse in an amusing and captivating way, the recording and examination of work actually done in the typing and preparing for dispatch of a letter. Summing up method study and the uses to which it could be put, Mr. Austin-Smith said: "It must be realized that this is a complicated matter. It can be made to look very simple, but it is complicated. It is, however, virtually what every architect does when he starts to analyse and design a building. He has to go through this process of systematic thought."

ALEXANDER GORDON said the architect's office had to develop a reputation for alertness, for prompt action, for keeping things alive and generally for not letting the client down. This meant that each member of the office team had to develop these qualities individually, and however good architects and assistants might be in other directions, some were naturally better than others on the question of reliability. In his office they had attempted to develop organized memory aids: the simplest, the keeping of day-to-day notes by each member of the team, with reminders as to whom they intended to write to, to phone, to speak to, or action they intended to take. This was in the form of a pad carried in their notebook, available at all times for entries to be made.

On the question of consolidated fees, Mr. Gordon said that his office had soon realized that any fee quoted to the client would be effected by the scope of the work handled by consultants and it would not be possible or fair to themselves to quote a final fee until at least the sketch plan stage. Initially, therefore, they told the client that the overall fee would be approximately X% and confirmed or adjusted this as soon as the form of the job was clear, at the same time advising the client of any special work undertaken by the members of the team up to that date which called for a supplementary fee.

Perhaps the most difficult work to be brought down to a simple percentage was that of the quantity surveyors, with their rather complicated method of fee assessment. One difficulty was removed automatically by the principle of recalculation of fees on the final cost, but it was necessary to avoid supplementary accounts for the usual services additional to the preparation of bills. Their standard agreement now, therefore, asked for a single percentage to cover preparation of bills, interim valuations, estimates, approximate pricing of bills, annotation, financial statements of work in progress, remeasurement works, adjustment of P.C. items, nominated subcontractors' and suppliers' accounts; but the quantity surveyor was only asked to quote a percentage when he had reasonable details of the nature of the work. Mr. Gordon said, "I have formed the view that just as an architect's fee is reduced in respect of the work handled by consultants, it might be reasonable to expect that the quantity surveyor's fee should be reduced in respect of large P.C. sums for specialist work, where no quantities are involved and which may represent 30 per cent of the total cost."

The study group meeting. Arthur King is speaking. Platform (left to right): A. G. Sheppard Fidler, Bill Allen, Alick Low and Alex Gordon

THOMAS MITCHELL said his office consisted of himself, two younger partners and generally about twelve assistants. All the work of his office required specialist collaboration with other professions. So far as structural and civil engineering were concerned, they had for many years gone to one individual firm, and consulted that firm regularly on everything, irrespective of how small or large the work was, irrespective of whether any official appointments had been made and irrespective of any arrangements about payment. The arrangement gave a service which could not be bettered if their offices were in fact amalgamated. Mr. Mitchell made a plea to local authorities that when briefing private architects they should respect any arrangements of the kind he had described and refrain from nominating consultants other than those with whom the architect normally works, because such an arrangement benefits the client.

ARTHUR HALL said in his firm, which was a large one covering most classes of work but about 50 per cent occupied with industrial building, they had a cardinal maxim laid down at the foundation of the practice in 1919 by their esteemed principal, Harry Weedon: that is that they could not hope to win and hold the respect and confidence of their clients unless their organization was at least as efficient as the clients, sometimes the clients' was not very efficient. Nor could they hope to execute work that satisfied the client and themselves, both practically and aesthetically, unless they started from that premise. To ensure his aim, Harry Weedon wrote, in 1932, a complete description of the organization, which was re-written in 1946 and was now overdue for a new edition. It embodied forty years' experience in about forty pages. The fact that it required re-writing at about twelve-year intervals showed that times changed and that new blood brought improvements.

A. B. WATERS said that the employment of specialists within an architect's office was very likely to have the same effect as the employment of an architect by a builder for carrying out the packaged deal. It resulted in lack of experience. If we considered a consulting engineer having equivalent fees to those of an architect he must do five times as many jobs, and it should follow from that, that the sort of advice he should be able to give, subject to the limitations which Mr. Mitchell had talked about, would be based on very much wider experience than would otherwise be the case. Accepting that specialists were necessary and that they worked in different ways, it was for the architect, if he was not to lose control of his job, to manage his specialists. He could familiarise himself with the methods which they used, and by looking after them and adopting this management attitude he thought that the ultimate result could be satisfactory.

JOHN STILLMAN said there were two kinds of efficiency: as seen by the client, and as seen by the private architect. As seen by the client, the architect was efficient if he produced a satisfactory building at the agreed cost and within the agreed time; but the private architect saw himself as efficient only if he did these things with an expenditure of effort which in terms of his own costs left him some balance of his fees with which to pay his staff properly and to live himself whilst waiting for the next job.

If the architect spent too much time being efficient for his client he would not have enough money and his internal efficiency could not be maintained; on the other hand, if he worked out ways of getting the drawings out quickly he might skimp the work and then the job suffered. There had to be a balance, and the correct balance was difficult to achieve.

Mr. Stillman made a case for the office with about ten

assistants—the size of his own office at the moment. In a very small office when two or three jobs came in together there was not the time to carry on and use the staff with the best efficiency. You were snowed under for two or three weeks and there were delays, while at other times there might not be enough to do. An office of about ten provided some flexibility, and at the same time allowed the partners to do a good deal of designing and to see their clients personally and be in touch with every job.

He assumed there were three partners. When offices got much bigger this personal contact was difficult. He thought that much of the organization necessary in the bigger offices was simply to replace the personal contact. He was intrigued by the fact that the large type of council office was frequently organized in groups based very much on a practice of the size he had discussed, with a group leader and ten assistants; the group leader acted very much like a private architect.

Mr Stillman said it was wrong to try to produce some memory aid for every day, because these things were not used. When a small firm got a fairly big job, the tendency was to employ a man to look after the administration of that job, and the partner was then left with the houses and odds and ends. That was not a very good plan. With two or three jobs there would be two or three assistants each doing one job, and there was a danger of being let down because one man was not very good.

To avoid that his office was organized in groups of two or three people, with some simple documentation to help.

Then there was the question of how the small practice dealt with specialist work. So far as consultants are concerned, his firm's position was rather a special one. They never did two jobs the same, and every job soon became a very complicated exercise in a particular field, and they had to have their consultants to help. They found in London that if they chose people who were sympathetic to their cause they could get all the consultant advice that they needed, very quickly and efficiently, and they had consultants who had worked with them for a long time and who were extremely good to them. He did not think that having the design team all in one office was a panacea.

F. B. POOLEY said he had come to the conclusion, after some research, that the "package deal" was about 9½ per cent more costly to the building owner than the straightforward method of contracting and tendering, where the architect enjoyed his traditional position of freedom.

It was said that the package deal produced buildings quickly and when the client required them. He suggested that it did not need a lot of alteration to present methods to ensure that we got very quick building with the straightforward method of competitive tender, by a slight modification of the standard form of contract. When materials and labour were in short supply, clauses were introduced into the contract which enabled most contractors to claim an extension of time if they failed to produce the building quickly. If the contract were restored to its pre-war form, so that the contractor could not claim an extension of time through lack of labour and materials, we should find that only contractors with the necessary resources at their command would tender for the work. When the Joint Contracts Tribunal met to produce the new contract he hoped it would see fit to remove clause 18.

Mr. Pooley said he would prefer to see the selected list of contractors done away with and to have quite open competitive tenders with a new type of contract, whereby if an unsuitable contractor failed he would stand to lose.

For the last three or four years his authority had been trying this. Their local contractors had told him that they would have disaster after disaster and that every Tom, Dick and Harry would tender, but they had found that by modifying their standard form of contract and leaving the whole thing open they received very low tenders indeed. They were probably two per cent cheaper than from a selected list.

W. S. GAULDIE said it seemed to Wright and himself that the prospect of producing better architecture with less effort and more profit deserved a bit of agonising reappraisal, which they proceeded to make.

It was not until they (Gauldie & Wright) had boiled the whole thing down to three essentials: Information, Decision and Communication, that they really began to make headway. He was more convinced than ever that this was necessary because today's discussion had underlined the fact that, although architect's offices varied tremendously in size and character, many problems were common to all of them, and these problems would yield to concerted attack if we all knew how to approach the objective.

In the field of information Mr. Gauldie said it was clear that we were over-supplied with some kinds and dangerously short of others. We were short of what he called "clinical" information, the sort of thing the medical journals published to advise practitioners of the failure of methods and materials which had not come up to expectation. That was not one of the functions of our journals, nor was it likely to be as long as the feelings of the advertisers had to be considered. It was not a fair argument that the manufacturers and the building firms should do a great deal of this investigation, because it was obviously not in the interests of the man who was producing a doubtful article to find out just how doubtful it was.

In the field of communication, Mr. Gauldie said he often felt that architects' constructional drawings, even the best of them, were aimed at impressing the contractor rather than instructing him. There was only one valid test of a good working drawing, and that was its usefulness to the builder.

ARTHUR F. S. WRIGHT dealt with the detailed treatment of instructions to specialists and consultants and the detailed use of present-day developments in commercial drawing offices.

At the beginning of any big job, immediately after briefing, Mr. Wright said it becomes apparent which consultant services will be required, which advice will be needed and very shortly thereafter which specialist services are really needed. At this stage it was important to remember that a consultant could and should advise and that a specialist very often had something to sell. In his office they invited a consultant to attend for interview after they had sent him a copy of the sketch plans, and thereafter they interrogated him very seriously in an attempt to assess his quality. At that stage the consultant would give some idea of how he proposed to handle the problem, and then the point arises whether the design would have to be altered—whether the consultant would have to change his mind or whether they must get another.

At the same time, Mr. Wright said, we send out general inquiries to those branches of the specialists which look as if they can satisfy our demand. We used a check list so that the specialists would provide the answers we needed and not the answers they thought we ought to have.

In order to speed up this matter of inquiry, his office used true-to-scale transparencies of small-scale drawings of their arrangements. That meant that they got draw-

The informal reception, "A Country Builds", in an anteroom, of the City Hall. The statue is the patron saint of Wales, Saint David

The Garden Party. John Eynon and Anne Bannister leading members as they arrive for the garden party at St. Fagan's Castle

The president and Mrs. Spence, Mr. and Mrs. Stephen Thomas at the wishing pool, St. Fagan's Castle

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Members at St. Fagan's Castle Garden Party

ings familiar to everyone in the office; the consultant had not as much drawing to do, nor had the specialist, and when the stock came back the overlays could be used both for making fresh transparencies for the main contractor and for making copies for general use without waiting for the specialist or the consultant to post them.

At the same time, his office had got a successful method for photo-reducing drawings. Foolscap copies of all pertinent drawings went out with the bills of quantities. For matters like electrical work, where the detail of the drawing was not of any great importance but the layout and general picture of the building was enormously important, these drawings were extremely satisfactory.

KEITH SCOTT said he would like more details of the type of drawings mentioned by Mr. Gauldie and Mr. Wright.

There was the question of the catalogues still needed for general type information. In his office they felt they had a very good system. They differed radically from Mr. Gauldie and Mr. Wright there. They had 18 qualified architects in the Preston office and a further 14 in the branch offices. They had a librarian, and he was in charge of their whole library system. They had an intercommunication system in the office whereby they rang the librarian, and within seconds the catalogue was on the desk. The librarian booked the catalogue out just like a librarian in a normal library would register books out, and every few days one got a form reminding one that the catalogue was still out. After three years the library had more than 6,000 catalogues covering 2,500 manufacturers, and there was a roomful of samples—about 1,500. It really payed off in terms of time.

With regard to the programming of work, Mr. Scott wanted to know whether Mr. Gauldie and Mr. Wright found that the method which they had outlined was fully satisfactory. They had tried it and found that it was not. They had been trying to forecast time and labour availability in the office more accurately. They had graphs showing the number of man-hours available in terms of building work per man-hour in relation to staff time. This was kept up to date for every phase in the job so that they could see what profit or loss a job was making at any given point in its career by reference to a target line already on the graph, and they could see from the graphs, by making a comparison, what the total man-hour availability of the office was likely to be at any given point in the future.

C. C. HANDISYDE said he thought the small office was terribly important to architecture in general in its effect on the public. He would like it if, somehow through the Institute, we could collect together a lot of information of the sort which Mr. Scott had given and build up a yardstick by which those offices which are interested in improving their efficiency could measure whether they are efficient or not.

For instance, there was the question of how many man-hours it took to do different jobs. In his office records of that kind were kept, but the work of a small office was so little that unless it could compare its results with those of somebody else it did not help very much to keep the records.

PETER B. DUNHAM said his office had a technical staff, including the three partners, which varied at the moment from between eight and fifteen. It started as a one-man show about 20 years ago.

The main difficulty was the relatively large number of small jobs a small office had compared with the relatively small number of very large jobs in a large office. It is this complexity which makes it so difficult to run the small office with medium efficiency. His firm had come to the conclusion that it should make much more use of the non-technical staff. He said:

"I suspect that in the large offices there are too many technical staff wasting their time on doing administrative jobs which I am sure the secretaries could do, and something of the same sort may happen in small offices. In fact, I feel that in a small office you can, if you do not look out, spend so much time evolving wonderful routine

and complicated systems that in the end you have no time to do any architecture at all. It is a tragedy of our time in many ways that the higher up the ladder you get in this profession and the more work you get, the less time is available for the principals or the group leaders to actually do the architecture; the designing is delegated, and the principal gets bogged down in all sorts of routine matters." His firm believed that a wider and more intelligent use of the secretarial staff of a small office could provide the answer to many of these problems.

THOMAS MITCHELL, M.B.E., said he did not disagree with anything that Mr. Dunham had said, but would put to the conference that instead of wondering whether the secretary or the technical staff should do a job it was fundamental first of all to decide whether the job was worth doing at all (i.e., the administrative job to which Mr. Dunham was referring).

R. BADEN HELLARD said he agreed with Mr. Mitchell that first ask what was the purpose of administration. There was no doubt that it was either to improve the product or to reduce the time necessary to produce the product, which in their case is a building.

We in our office use a series of check lists which have been specially devised from standard management practice for an approach to the problem of drawings. We conscientiously put this test in front of us every time we do a new job.

The first question is: what is the document for? There are a series of sub-headings: is it site construction, pricing information, assembly details, record purposes or contract or legal purposes?

The next is: who is the document for? There are the appropriate sub-headings. Is it for the general contractor, the client, town planning, some estate approval, byelaws or a combination of any of them?

The next is: what do they want to know, and what do they want to know it for? Then: which is the best way to convey the information? Then: is the information worth the time spent in preparing it in the office? The client has to pay for the time in the office and on the site, and there would not seem to be much point in spending £10 or £20 in the office on something which could be settled on the site equally well in five minutes. Too much drawing is always too much if it is not the right drawing, but it can never be too much if it is necessary to convey information which is required.

We have kept cards of all the time spent in the office for the last six or seven years, and we have found that the average non-productive time—time not allocated to any given job—per month varies between 16·2 per cent and 51 per cent—once it was as high as that. However, we still seem to be able to do jobs on which other people cannot make a profit. The 51 per cent was in August when a lot of the staff would be away on holiday, but they still have to be paid and costed. The 16·2 per cent was in the middle of the winter. The average for the whole of the seven years is about 20 per cent.

BRYAN WESTWOOD said he wanted to put in a plea for photographs, not necessarily good ones, instead of drawings. When one is engaged in renovating old buildings there was nothing to beat photographs. They had found, in renovating war damaged property, working in a very small way, that photographs would do more in a comparatively short time than you could do in describing a drawing. This method obviated the need to make sketches. The relative heights of roofs, eaves and so on were immediately conveyed even by a dreary photograph taken in the rain.

KENNETH W. MARK gave a few thoughts as an assistant in a small office for some 14 years. A vital point, often missed, was the relationship between the principal and the staff. If this relationship could be happier, from both sides in many cases, he thought we should be a lot more effective and better organized. Often a lot of records, seemingly just what was needed from the practical point of view, were a terrific burden on the staff; often the staff were not granted time to keep records which they would like to keep. He thought the secretary had a very important place in a small office, but there was always a danger that the secretary could become almost the principal, this ought to be very carefully watched, because it could cause a lot of bad feeling and disorganization. Also he thought all who had taken the trouble to enter this profession—in many cases with a great deal of difficulty—must have offered to them a challenge. Nobody could feel proud of something which they could do in their sleep. Often in offices after one has spent many years in studying and obtaining qualifications one finds oneself with no challenge. Also, one must have complete confidence. "You must have confidence in the person for whom you are working, and you must feel that the person for whom you are working has complete confidence in you," Mr. Mark said.

W. S. GAULDIE referred to type details mentioned by Mr. Scott. The great thing was not to start typing all sorts of various things. So far they had not been able to do windows, certain kinds of doors, stiles and frames, and certain kinds of concrete. One should avoid having details of eaves, verges and so forth, because one may introduce a restrictive factor in design. They are matters for source details. The fewer the type details the better, and the more flexible they were the better.

About Mr. Scott's information problem, he thought six thousand catalogues was too many. He believed most should be thrown away. We got a great deal of literature every day, and it was beyond one's ingenuity to keep track of it all. What we threw away we could resuscitate by looking up special files in the architectural standards catalogue and by contacting the Building Centre. There ought to be an accurate index at the national level for the 6,000.

ARTHUR LING, who was asked by the president to start the ball rolling for the large office, said he thought, first, that in the large offices they were going to be judged in the future as much by the maintenance and records of their buildings and the running costs as they were by functional and aesthetic success.

He felt that we had to point out quite clearly from this Institute, as a profession, that we, as architects, were not responsible for inefficient design giving rise to heavy maintenance costs, that the capital costs which had been allowed for partciular buildings had been so cut by the Government that we had had to cut down on finishes, to put in equipment which gave rise to heavy running costs, and perhaps also to put in equipment which very shortly would have to be changed because of the Clean Air Act.

The second point Mr. Ling touched on was the question of the "package deal". The complaint that there seems to be against this service—was that the architect was at the bottom of the package. There is one way of solving the problem: to put the architect on top of the package.

He hoped that the borough architect of Edmonton might say something about this. In Edmonton there had for some 10 years been a direct works department which was organized under the borough architect.

K. CAMPBELL spoke about two problems relating to efficiency in the very large office. One was the mechanical problems of efficiency or the problems of mechanical efficiency, which are all those things connected with the use of forms, filing systems, check lists, notebooks and so forth. The second problem was that of the human factor in efficiency.

He saw the difficulty and the danger of the prize confidential secretary starting as the passer-on of all the principals' ideas, opinions and instructions and ending up as the originator of those ideas, opinions and instructions. That could happen in large public offices as well as in private offices.

In his office they produce a very large information book. It was an excellent thing—about the size of one volume of the *Encyclopædia Britannica*.

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The real problem was: what was the final resistance point of the ordinary chap in a big office to instructions which come round in the form of paper? It is not only information but a continuous stream of instructions, notes, exhortations, reminders and so forth going out. They found that they rapidly reached the resistance point, the saturation point.

In the small office, whether one liked the boss or not—and it was almost irrelevant—one was at least in the middle of the turmoil of the practice, the tensions and the pressures day by day, and also the catastrophes. With all this going on it made the chap feel that he was part of it.

In the very large office that was not so. The chap was to some extent insulated. The difficulty, as they had found, was to maintain the sort of pressure and tension low down in the office that you got in a small office.

H. S. HOWGRAVE-GRAHAM said there was a reference by Mr. Ling to the economies which might be obtained with the direct labour scheme. He thought there were grave doubts in the minds of many people whether such economies really were obtainable. There were arguments in favour of such schemes and arguments against them. They left out the competitive element which drove many people in contracting firms to seek efficiency in their organization, and it seemed that that was the greatest drive towards efficiency.

We all hoped, he thought, that the fixed-price tender had come to stay. There was one aspect of that which Sir Thomas Bennett (not present) hoped he might have an opportunity of putting forward. It was that fixed-price tendering arrangements between the employers and the employees in the building industry were for their settlement on merits. The moment you had labour on fluctuation there was no longer any very strong incentive on the part of the employers to resist requests for increases in pay, for the operatives say, "What have you to worry about? You will get it all back anyway". That was a point to bear in mind.

F. R. STEELE, who spoke from the point of view of the medium-sized county office with 30 architects, or people approaching being architects, and 30 or 40 technicians and clerks, said in his experience there was probably more danger in over-organization than in under-organization.

There were two particular checks which he had used and found most useful. He liked to know that each assistant was producing about £40,000 worth of work a year—a little less if it was a big, complicated job or a little more if it was a simple job—and he liked every month to see a balance sheet for all his contracts.

The president then asked **A. G. SHEPPARD FIDLER** to sum up on the questions of the large office, Mr. Fidler made these points: about maintenance, we should, as architects, look out for opportunities of pointing out that we have been designing buildings on a very tight purse-string since the war, not only in relation to materials themselves but in structural techniques and also in space standards for buildings.

He had not thought of the use of direct labour schemes as an answer to the all-in service. He felt that the N.F.B.T.E. and others may have different views about its efficacy in that direction, but it was an interesting idea, and it brings the architect to the top of the package, as Mr. Ling said.

There was a distinct problem in the larger office in this matter of the dissemination of information. In his office they tried to keep people informed of what was going on by means of meetings and office instruction, which were kept to the minimum. He had a central library with a librarian for technical information, who carried out a certain amount of limited research, but technical information sheets, catalogues and so on were put with each group.

He had one further remark to make. When a job was finished they wrote up a sort of story of the contract.

The president then asked **K. MARTIN BAXTER** to open the discussion on specialists and specialists sub-contractors. In relation to maintenance, Mr. Baxter said he would like to stress that there was a need for revision of the scale of fees to allow a certain percentage whereby the architect himself might be appointed responsible for the maintenance of the building that he had designed, and for a specific period. That period might be lined up with the period of the latent defects. It would give architects greater freedom in planning. They could consider guarantees of materials from sub-contractors and give greater consideration to the type of floor finishes and other finishes and make a more detailed analysis of the type of lighting to be used.

LEONARD C. HOWITT dealt with the question of how the architect should handle specialist work such as structural engineering, heating and ventilation and electrical engineering. The right answer is not necessarily the one that gives the least trouble to the architect but that which gives the most efficient and most economical service to the client.

One solution, he said, was to employ within the architect's organization engineers qualified in these respective spheres. The second solution was to employ the services of private consultants. The third is to entrust the job to a selected specialist sub-contractor who will provide all the design services required.

The first two solutions provided few complications. The third solution there was no competition, and not only could it be questioned whether the design was the most economical for the required performance, but how was the client to be assured that the total cost was the least he need pay for the specified result?

A possible fourth solution was to invite competitive scheme and tenders from selected specialist firms.

Considering the position in the light of principles involved rather than from what could be achieved in practice it could be observed that many of the arguments used in favour of employing the contracting firm that gives an all-in technical service for the tender price could be used to justify a client employing a building contractor who gives an all-in tender which includes architectural services; in both cases the professional technician is employed by the contractor and not by the client.

HAROLD CONOLLY said the Joint Consultative Committee had worked for a couple of years on a code of tendering procedure which was very shortly to be issued. This had been a hard job to hammer out and when the code was finally published they hoped it would be universally adopted and used almost as invariably as the R.I.B.A. form of contract.

Yesterday, Mr. Pooley had rather decried selective tendering, but Mr. Conolly submitted to him that the whole experience of the profession was against the use of indiscriminate or open tendering. He thought that battle had been won long ago.

JOHNSON BLACKETT said, on the question of specialist engineers, there was a danger in using their services, a danger in costs particularly. An experience which he had recently had led him to recommend his authority to employ a qualified firm of reinforced concrete consultants, not sub-contractor specialists. They paid full scale but they got competition. In the case of your specialist sub-contractors with their sptcialist sub-contractors, they expected to get the job, and generally did. It was difficult to go into competition with specialist sub-contractors for reinforced concrete frame floors for a building, or even steelwork, because the firm which you approached expected to receive the job.

So by doing it the other way he had found that there was a diminution in the cost of the specialist work, and that had been incorporated in the main bill of quantities of the civil engineering consultants, and the contract and the prices had turned out to be very reasonable indeed.

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He supported Mr. Conolly in his remarks about open tendering as against invitation tendering.

BRIAN BAGNALL, touching on the subject of the package deal, said the term was used as though the architect recognized it as a sin to take over the bread and butter. It was as though architects were jealous of the ability of the contractors to produce a service for the client. In many cases the client was aware that he was being offered a very good service. The architect must accept this as a challenge rather than a threat.

BRYAN WESTWOOD said his firm was gradually being forced away from the independent consultant for mechanical services for two main reasons.

First, the difficulty of maintaining the same standards in their work as in our own where one was being forced to a price per place. Secondly, the lack of control that one had over drawings. When you go to the private firm which had a specialist for producing the equipment you could insist that the drawings must be in your hands at a certain reasonable time and you could be reasonably sure of getting them. If you go to an independent consultant he would probably say that it was not his practice to show more than a few pipe runs and that until he had seen the equipment which his specialists would produce he could not give you any drawings.

W. A. ALLEN agreed that a strong point had been made about looking at the standards of the consultants whom we brought into this work. Their standards were very often not as high as our own. Ours have often been criticized in some respects, but he did not know how the consultants had managed to escape this criticism.

Another thing was that we spoke of specialist consultants and our own work as architects. We knew that in the big office one could employ consultants on the same basis as the architects themselves were employed—that is, a full-time basis. One could get virtually a higher grade of consulting service built into the organization. This was really not very practicable for the medium office and certainly not for most of the small offices. However, a very large part of the work which the profession was called upon to do called for an expertise rather outside our day-to-day familiarity, but certainly not lying outside our capacity to organize it within our own offices.

It seemed to Mr. Allen that this medium-sized work, the work which demands no specialist competence, was something which we should try to organize within the profession. He would have thought that one well-trained chap could easily do the lighting, heating and ventilation and structural side of the work that we do. It does not call for the specialist consultant whom we should elevate to a role which we need in circumstances which call for a specialist approach.

JOHN STILLMAN said Mr. Allen's suggestion that one should train in one's office somebody to do the simpler heating and electrical work is a good one, but in the case of the bigger jobs there are difficulties, and I should like to know what one does about the responsibilities in connection with such jobs.

BRYAN WESTWOOD said he thought one of the answers was to employ an independent consultant as that—strictly speaking—and pay him a fee for producing a sketch design for the scheme sufficient for tendering by a number of specialist sub-contractors. Employ him again to check their work on the site. They had done that, and, rightly or wrongly, had themselves paid the fee for the independent consultant and not had any deduction from their fees in respect of that work.

Asked by the president to sum up this part of the discussion, **ALICK LOW** made these points: Maintenance problem was part of the design of a building. That was vital. How you are to make the architect responsible in perpetuity for what he has done was another problem. We could not work that out in detail at once.

He hoped the R.I.B.A. would take note of the various comments made in the discussion that morning because a special study group might look into the relationship between architects, consultants and specialist contractors.

Some private offices have been working on inclusive fees for a long time. Fellow consultants are not at all sure they are prepared to play ball with the architects on combined fees. For instance, the Association of Consulting Engineers do not allow an engineer in partnership with his architect to be a member of the Association, whereas, round the other way, the Royal Institute of British Architects is quite prepared to have any member of the Association of Consulting Engineers in partnership with us. That needs discussion between the professional bodies.

If we can work in the smaller offices in closer collaboration with consultants and actually have specialists work with us as partners probably in larger offices, we can reconsider what the total design fee should be. I think that matter should be considered by the Institute.

On the question of principals designing in offices, Mr. Low said this was a problem which went right through the architectural profession, in both large and small offices. He did not really think that an architect could go on designing—producing original and interesting work—all his years. He had to stop that sort of work sometime and make way for an up-and-coming, more vigorous person who could correlate ideas much faster, a person at the age of 35 or thereabouts. Unless the principal or the leader of the office, whether it was private practice or local authority, had trained himself to be an administrator and an efficient architect—what we had been talking about—and could organize an office within which good designers could flourish and do their best work, then I thought he would be extremely disappointed in his old age.

Conference Events

Continued from page 810

Affairs; the Lord Mayor of Cardiff, Alderman Mrs. Helena Evans; Dr. Glyn Simon, the Lord Bishop of Llandaff; Basil Spence, president, R.I.B.A.; Stephen Thomas, chairman of the Conference Executive Committee (unfortunately Cyril A. Hughes, president of S.W.I.A., was unwell and unable to be present); Sir Percy Thomas, past president, R.I.B.A.; Sir Godfrey Llewellyn, BART., chairman of the Welsh Regional Hospital Board. At the end of these speeches the secretary of the S.W.I.A., D. Garbutt Walton, said a few words of appreciation and presented Bill Spragg (retiring secretary of the R.I.B.A.) with a set of Winston Churchill's *History of the Second World War* (six volumes) as a gift from his Institute. Bill Spragg, who received many good wishes in other speeches, thanked the South Wales Institute, said the R.I.B.A. had been a hard task master and he had had little time for reading. He was looking forward to reading the books he had been presented with.

It is almost impossible to sum up an R.I.B.A. conference. More and more the conference is an opportunity for airing views at random, and not the kind of conference which follows matters to a conclusion. To reach conclusions the annual conference should really be a precursor of a second conference. In fact, the points made by speakers at these conferences are carefully studied by the relevant committees of the R.I.B.A. This year's conference, from the point of view of ideas, was a good one, in your scribe's view. Several speakers referred to the fact that there must be a lot more information about architects' offices which could be usefully brought to light. Here is a chance for the R.I.B.A. to collect and sift more information with the idea of publishing a handbook on office administration for the guidance of different size private offices, for the general guidance of public offices, and as a text-book for architectural schools.

G.M.

NEWS

Birthday Honours List

Knights Bachelor: Stanley Spencer, painter; Hans Heysen, Hahndorf, South Australia, in recognition of his contributions to Australian art.

C.B.: E. Bedford, ch. architect, Min of Works.

C.B.E.: A. N. Gardiner, dep. ch. eng., Min. of Housing and Local Govt.; E. A. F. Johnston, dir. of works, Ministry of Fin., N. Ireland; R. A. Kidd, county surveyor and dir. of planning, Notts; Capt. J. H. Quick, ch. nautical surveyor, Min. of Transport and Civil Aviation; T. G. Randall, dep. clerk, L.C.C.; M. A. Sisson, architect; J. A. Willis, assist. sec., Min. of Health; Miss Mary Woodall, dir., Birmingham City Museum and Art Gallery.

O.B.E.: R. Hobday, sen. architect, Imp. War Graves Comm.; H. J. King, chtd. surveyor, for serv. to Govt. Depts.; E. A. Lyons, architect; P. E. Sleight, head, dept. of Civil Enginrg. and Bldg., Brighton Tech. Coll.; Miss D. J. A. Helmrich, pres., Arts Ccl. of Australia.

M.B.E.: W. C. E. Bell, mgr., Dorman, Long (Steel) Ltd.; W. E. Rawson-Bottom, engr. (Main Grade), Min. of Works; J. H. Burton, prod. mgr., Asbestos-Cement Moulded Goods Divn., Turners Asbestos Cement Co.; E. J. Harding, chm., reg. joint ccl., Nat. Fed. of Bldg. Trades Ops.; J. A. Hayward, supt. safety offr., John Laing & Son; W. E. Hollins, sen. architect, Dept. Health for Scot.; P. Mifsud, assist. quantity surv., Malta, War Off.; W. T. Powell, archt., Min. of Works; Miss M. Wragg, hsg. mgr., Crawley Dev. Corpn.; W. I. Shipley, archit., Publ. Wrks. Dept., Fed. of Malaya.

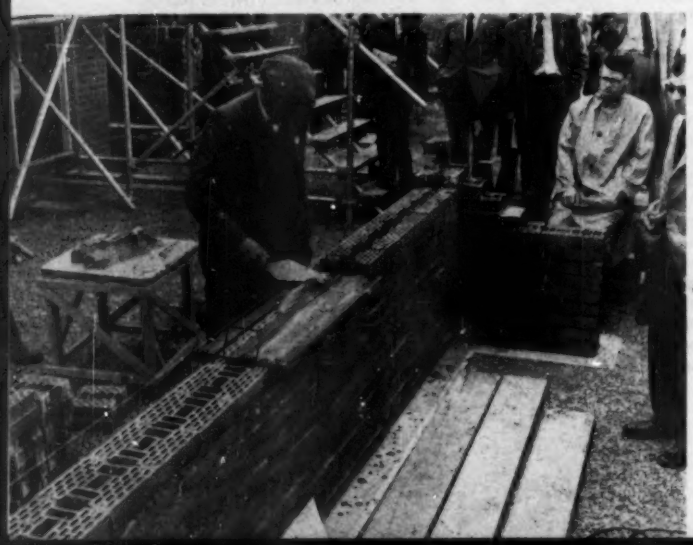
Deputy Director, C.o.I.D.

Mr. J. Noel White is to be deputy director of the Council of Industrial Design from January 1, 1960, when Mr. Paul Reilly, the present deputy, succeeds Sir Gordon Russell as director of the council.

Mr. White, who read archaeology at Cambridge before the war, served with the Royal Air Force and later as an air historian on the official history. In 1947 he was appointed to the staff of the Royal Commission on Historical Monuments (England). After spending six years with the Rural Industries Bureau as Information and Exhibitions Officer, he joined the Council of Industrial Design as head of the Information Division in 1954, about 18 months before the Design Centre was opened in the Haymarket.

Institution of Structural Engineers: President

Mr. L. E. Kent, B.SC.(ENG.), M.I.C.E., has been elected president of the Institution of Structural Engineers for the session 1959 to 1960. He will take office in October. Vice-presidents are: Lt.-Col. G. W. Kirkland, M.B.E.(MIL.), Mr. F. R. Bullen, Dr. F. G. Thomas, Mr. F. M. Bowen, Dr. D. D. Matthews and Mr. E. N. Underwood.



A contract is signed and the first phase of construction of the new New Zealand House is under way (Contractors: Holland & Hannen and Cubitts (Great Britain) Ltd.) A model shows the latest design (see also A. & B.N. 13-12-56). Architects: Robert Matthew and Johnson-Marshall

Exhibition of Chinese and Tibetan Architecture

An exhibition of 225 photographs, some in colour, of Chinese and Tibetan architecture will be on show at the R.I.B.A., from July 9 to July 31. The exhibition, arranged by the Association of Chinese Architects (A.C.A.), is in two sections of which the greater part illustrates historical and Chinese architecture and town planning—a continuous tradition of more than 2,500 years. A smaller section of the exhibition will illustrate some of the work in town-planning, industrial building, office buildings, hospitals and housing, and engineering works carried out since 1949.

D.S.I.R. Technical Digests to be Published Again

The Department of Scientific and Industrial Research will shortly resume publication of its Technical Digests which were last issued in 1957. These will be launched by a free distribution to industrial firms and will then be available only by subscription. The object of the digests is to call attention to useful items appearing in technical literature; the series will be published monthly. The annual subscription will be 3 gn for sets of 15 items a month, with a reduction for quantity supplies.

The Child and the Landscape

Miss Sylvia Crowe, P.P.I.L.A., will address a National Conference on Play Leadership on "The Child and The Landscape". Dr. R. Bradbury, chief architect and director of housing, Liverpool, will also take part. The conference, sponsored by the National Playing Fields Association at St. Katherine's Training College, Liverpool, costs from one guinea to five guineas, according to facilities required, and will be held from July 2-4.

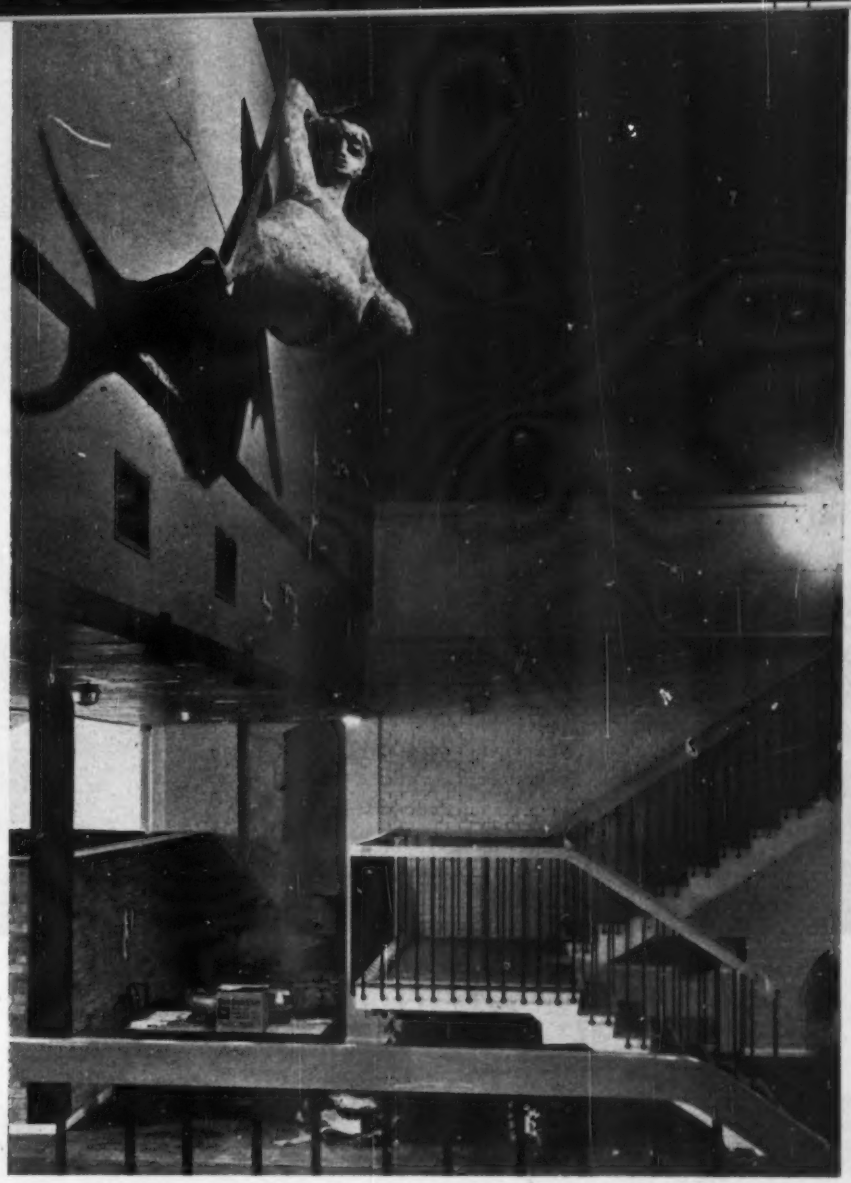
◀ *Building Research Station new type of hollow clay bricks being laid at the Ministry of Works Plant Exhibition at Greenford last week. The exhibition will be reviewed in a future issue*

THE ARCHITECT and Building News,
24 June 1959

Entrance foyer ▶

THE MERMAID THEATRE PUDDLE DOCK

Architects:
DEVEREUX and DAVIES



City theatre on the Thames ▼

THE Mermaid Theatre at Puddle Dock, Blackfriars, is a unique venture in theatrical design. Financed entirely by public subscription, it is London's first new theatre for 25 years and the city's first for more than 250 years.

Bernard Miles, who, with his wife, is responsible for the project, has worked on the principle of restoring the close contact between stage and audience which existed in Elizabethan times. This has been achieved by placing the 500 seats on a single sharply-raised tier, none of the seats being more than 65ft from the stage. The stage is unusually low, there is neither a picture-frame, curtain, proscenium opening, footlights or an orchestra pit; the latter being incorporated in the stage set for the play "Lock up your Daughters".

A fully licensed restaurant, seating about 75 persons and overlooking the Thames is also provided. There is a licensed snack bar and coffee bar in the foyer.

Site

Puddle Dock is in Upper Thames Street, about 100 yards east of Blackfriars Station. The new theatre rises from the shell of an old seven-storey warehouse which was blitzed in the last war.

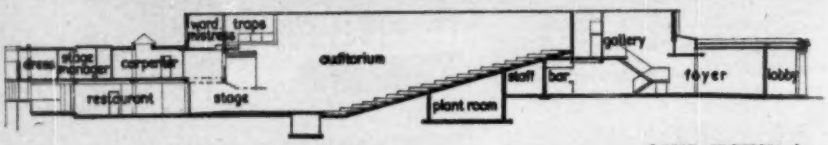
Planning

The foyer, housing bars, cloakrooms, staff rooms and publicity office, is entered through armour-plated doors. Staircases on either side lead to the auditorium. The stage is a low, bare platform, 9in above stall level, 48ft wide and 28ft deep, extending the full width of the building. In the centre is a turntable, 20ft in diameter.

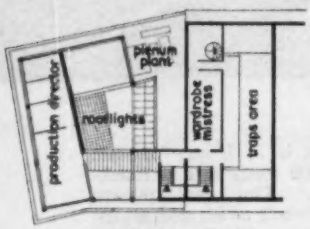
Behind the stage is a 9ft deep concourse with staircases leading to the dressing rooms above the restaurant. For special productions, it will be possible to open up the concourse, releasing the whole area as a vast stage, extending 70ft in depth, with the river in the background.

Continued on page 821

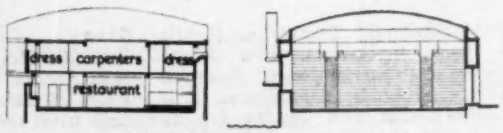
One of the bars



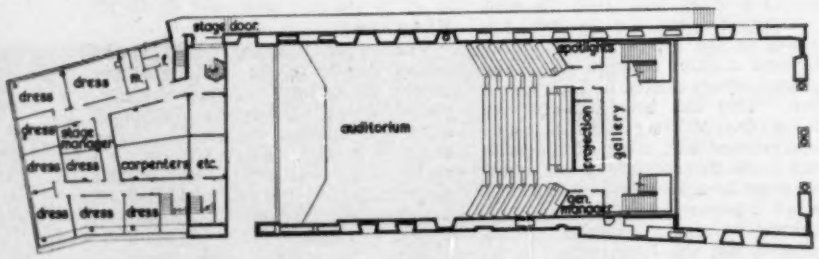
LONG SECTION
SCALE : 1 IN=48 FT



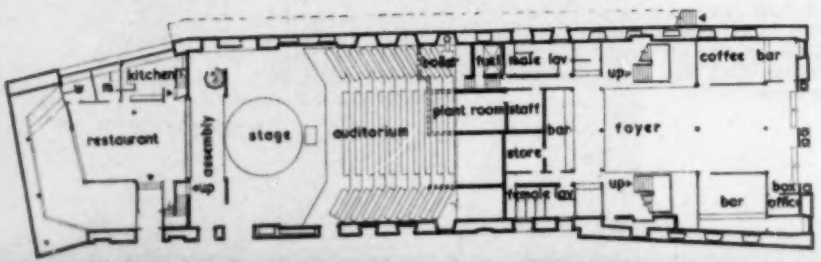
SECOND FLOOR



CROSS SECTIONS



FIRST FLOOR GROUND FLOOR



THE MERMAID THEATRE

Heating and Electrical Consultants:
A. H. BARKER and PARTNERS

General Contractors:
MARSHALL ANDREW & CO. LTD.

Sub-contractors and suppliers:

Acoustical Treatment: John Dale Ltd. *Asbestos Roofing:* Turners Asbestos Cement Co. Ltd.; The Boddy Roofing Co. Ltd. *Bar Fittings:* Whitbread & Co. Ltd.; Charrington & Co. Ltd. *Boiler House Chimney:* True Flue Ltd. *Carpet Laying:* Thomas Tapling & Co. Ltd. *Catering Equipment:* Express Dairy. *Electrical Engineers:* Johnson Pearce & Co. Ltd. *Fans (Plenum):* Woods of Colchester Ltd. *Fire Fighting Equipment:* Pyrene Co. Ltd. *Floor Finish:* Armstrong Cork Co. Ltd.; The Marley Tile Co. *Folding Doors:* Bolton Gate Co. *Furniture:* Ercol Lion Furniture Industries. *Joinery:* Austin-Hall Group of Companies; F. Austin (Leyton) Ltd.; M. A. Morrie Ltd. *Glass:* Aygee Ltd. *Glamorock:* Glamorock Ltd. *Heating Engineers:* Smeaton & Sons Ltd. *Ironmongery:* A. J. Binns Ltd.; H. & C. Davis & Co. Ltd.; Mott and Partners Ltd.; The Safety Tread Ltd. *Lighting (General House):* Atlas Lighting Ltd.; A.E.I. Lamp & Lighting Co. Ltd. *Lighting (Stage):* Strand Electric & Engineering Co. Ltd. *Paint:* Blundell Spence & Co. Ltd.; Joseph Freeman Sons & Co. Ltd.; John Hall & Sons (Bristol & London) Ltd. *Reinforced Concrete:* The Rom River Co. Ltd.; G.K.N. Reinforcements Ltd. *Refrigeration:* J. & E. Hall Ltd. *Roofing:* Essex Flexible Flat Roofing Co. *Roof Lighting:* Haywards Ltd. *Radiators:* Copperad Ltd. *Sanitary Fittings:* Adamsez Ltd. *Seats:* G. B. Kalee. *Steel Construction:* Croggon & Co. Ltd. *Stage Equipment:* Lift & Engineering. *Spectro Glaze:* Atlas Stone Co. Ltd. *Telephone (Internal):* English Telephone Co. Ltd. *Ventilation (Roof):* Colt Ventilation Ltd. *Windows:* The Crittall Manufacturing Co. Ltd. *W.C. Partitioning:* Venesta Ltd.

Continued from page 819

The restaurant, about 46ft square, has long windows looking out over the river with views to the west, of Blackfriars Bridge and to the east, of Southwark Cathedral and Tower Bridge.

Over the restaurant are the dressing rooms, property store, etc. Dressing rooms can be approached either from the assembly area, or along a catwalk running along the west side of the building above Puddle Dock.

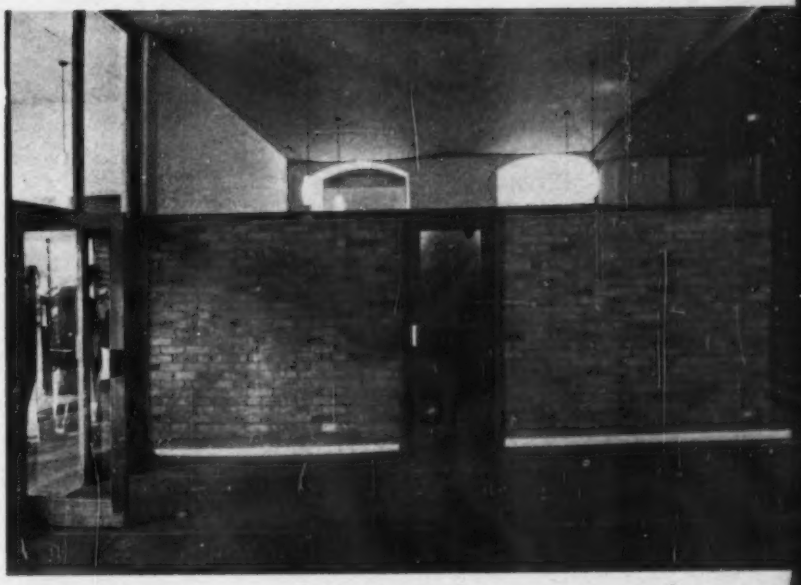
Construction

It was decided to incorporate the existing 4ft thick walls in the design and simply bridge them with a reinforced concrete barrel-vault roof, 140ft long and 49ft clear span. The barrel vault has four stiffening beams, is 2½in thick at the crown, 6in thick at the eaves. The roof is covered with three layers of roofing felt on insulating screed. The under surface of the barrel vault is fair-faced concrete, painted.

Services

Lighting is controlled from a desk in the projection room at the back of the auditorium. Stage lighting is mainly positioned along the side walls and ceiling of the auditorium. Small narrow beam ceiling fittings are used for the auditorium lighting.

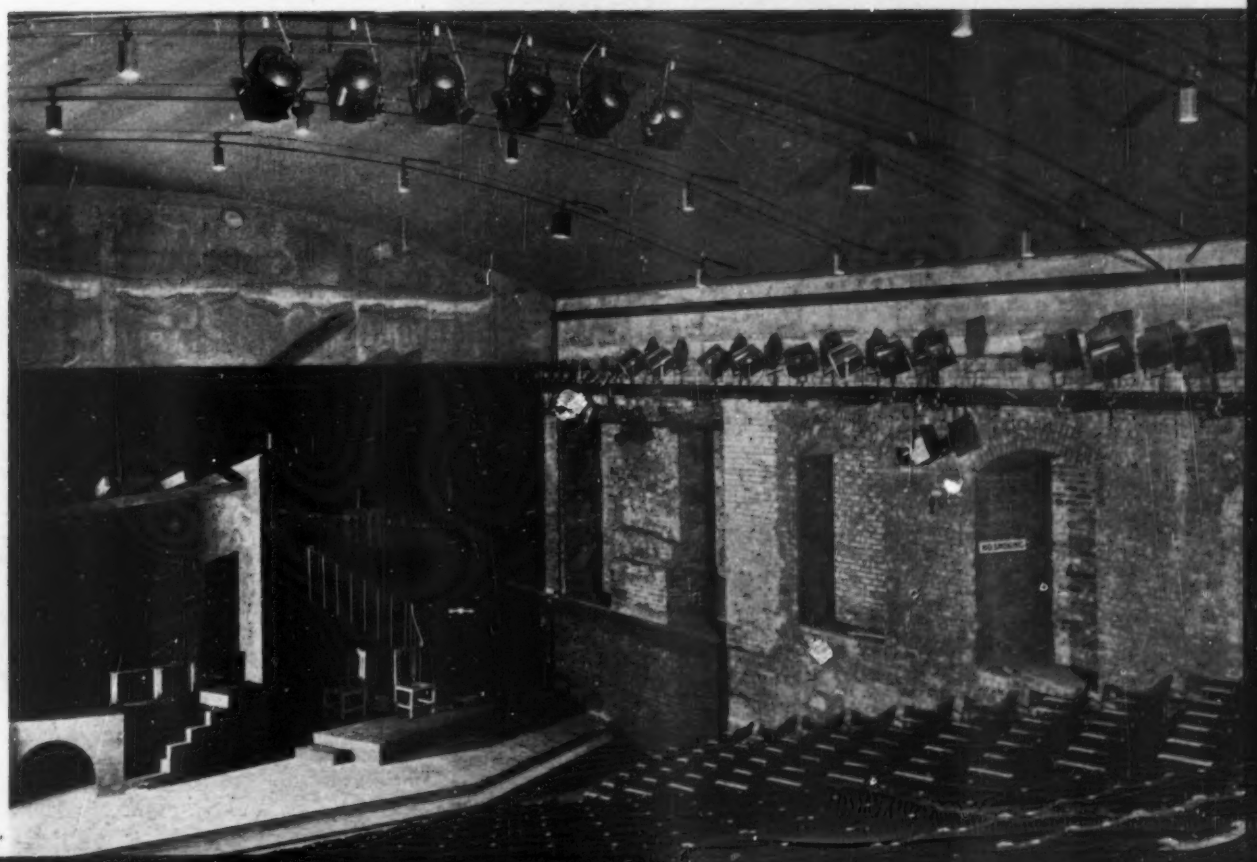
Stereophonic sound has been installed and this equipment, a donation from the Decca Record Co., is mounted in the console also positioned in the projection room.



▲ *The bar enclosure*

◀ *Restaurant*

The auditorium ▼

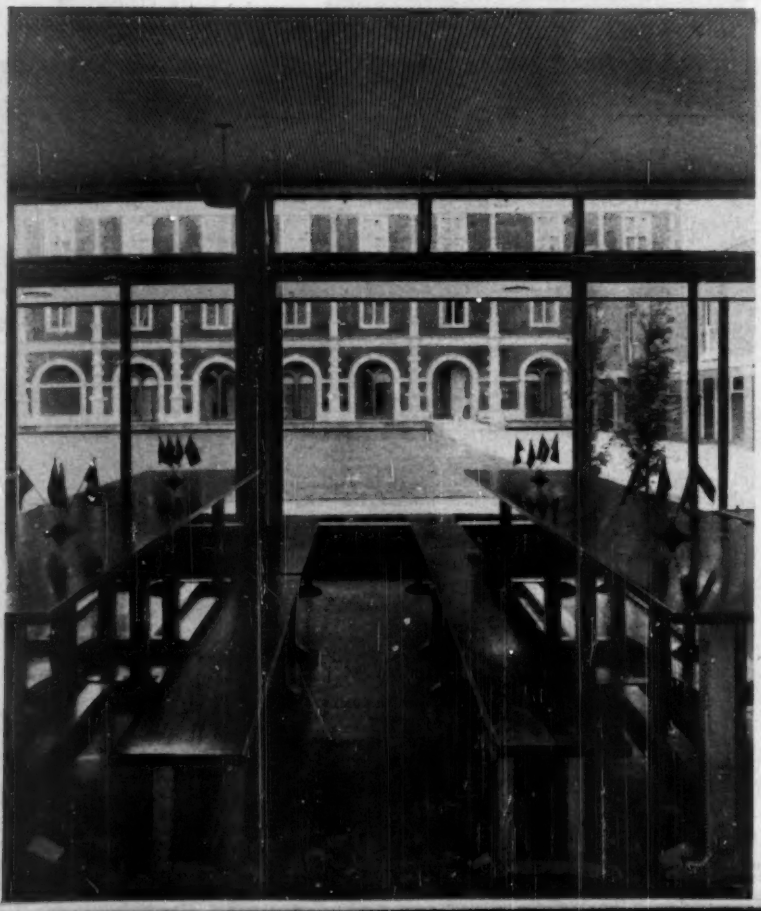


Photos: HENK SNOEK

NEW HOSTEL FOR THE Y.H.A. AT HOLLAND PARK

Architects: SIR HUGH CASSON and NEVILLE CONDER

Miniature flags symbolize the International spirit of the Youth Hostels' Association



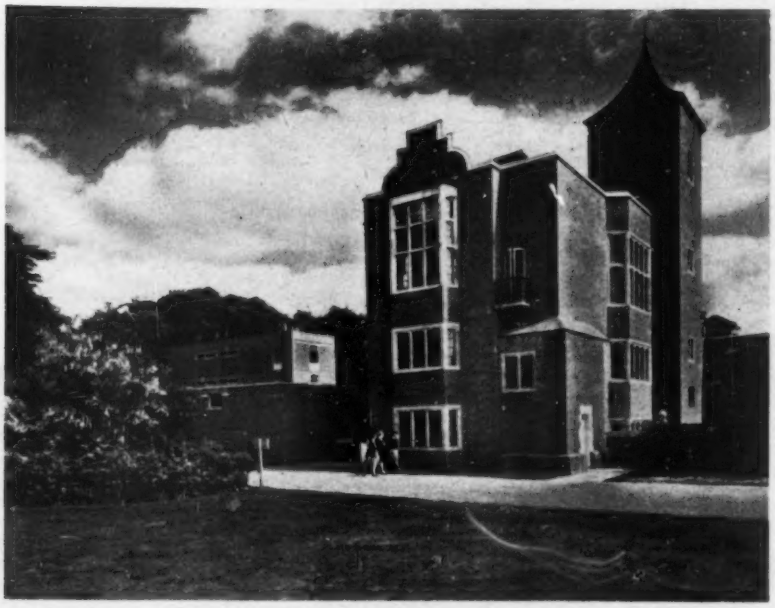
ANOTHER example of the successful integration of the old and new is to be seen within the gardens and woodland of Holland Park in London. Here, part of the old and restored Holland House (built for Sir Walter Cope early in the reign of James I) is linked to new architecture by Sir Hugh Casson and Neville Conder to form the King George VI Memorial Youth Hostel. Again, a worthy cause, and assured of continued success.

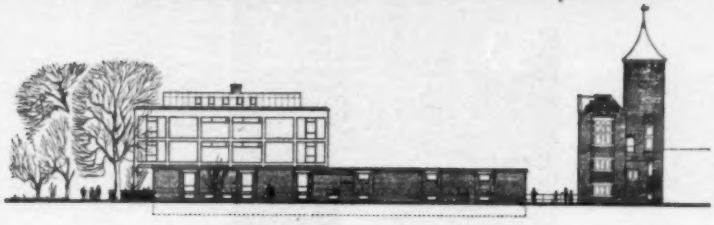
Historical Background

A background story to this interesting architectural "marriage" is given by the London County Council:

"The blitzed remains of Holland House and 54 acres of Holland Park were bought by the L.C.C. from Lord Ilchester for £250,000 in 1952. Thus a unique opportunity was taken in a congested area of London to make available for Londoners and their visitors a park especially notable for its pleasant woodland area, attractive gardens and valuable sports facilities. The house itself, ranking with the greater Jacobean mansions of the country, was unique in inner London, and on both historical and architectural grounds had strong claims to be preserved. Unfortunately, the severe damage suffered during the war and subsequent deterioration made it impracticable to restore its former grandeur, but after very careful consideration it was decided that the fabric of the arcades and the ground floor of the centre portion could be preserved at a cost of about £17,000.

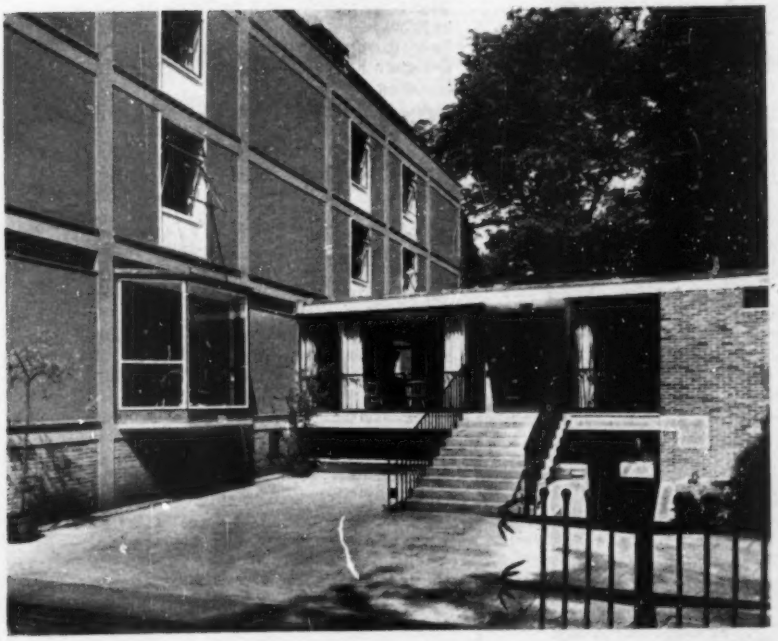
"Restoration and adaptation of the east wing was made possible by the proposal of the Youth Hostels' Association, supported by the King





north elevation.

Approaching the new Y.H.A. hostel, three aspects are presented to the weary traveller. A first view from the Dutch Garden of the restored east wing (facing page). Above, the new two-storey dormitory block. This has the colour and scale of a garden wall and serves a similar function. Below, the main entrance



George VI Memorial Fund, to provide a youth hostel for about 200 beds. The proposal offered a worthy use of the east wing which would not involve the L.C.C. in undue expenditure on its preservation, and in 1954 the Council promoted legislation to permit the use of a small part of the grounds for the purpose. The Association's architects for the scheme were Sir Hugh Casson and Mr. Neville Condor, with the L.C.C.'s architect acting as consultant for the restoration of the structure of the east wing, towards the cost of which the Council has contributed £11,000. The scheme is designed to provide the youth hostel accommodation in a group of buildings to harmonize with the preserved east wing of Holland House and to ensure the minimum interference with public enjoyment of the park."

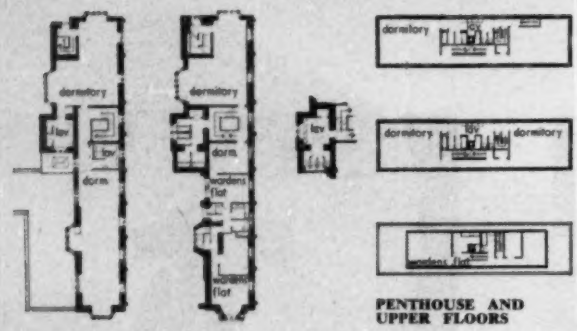
Architects' Solution

The latter part of the report printed above has been achieved as a result af four basic design decisions:

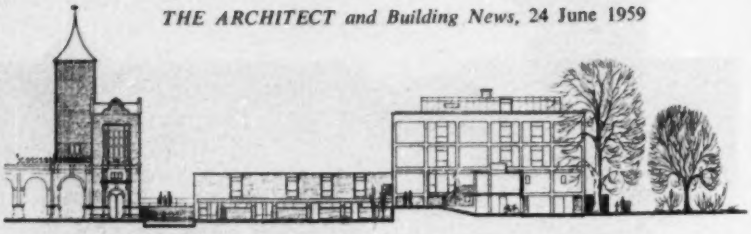
1. To build the group round a court in the manner traditional to an Oxford or Cambridge college, and with no physical contact between the new and the old. This keeps the old wing inviolate and enables it to be freely viewed and appreciated by the public from a number of different viewpoints.

2. To provide the new accommodation in a loosely linked group, the varying heights of which could be adapted to their position on the site. By this method it was possible to allow the old wing to remain a dominant element in spite of the fact that its bulk is considerably less than the combined cube of the new building.

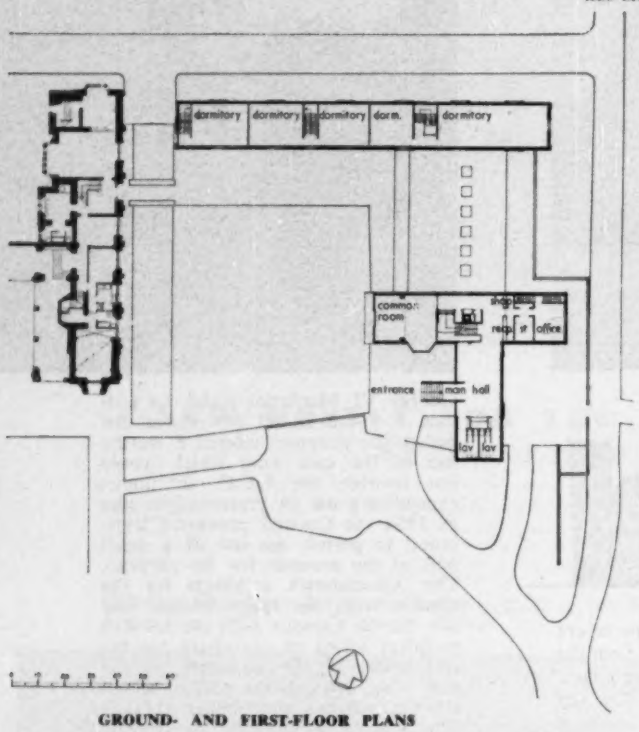
3. To further assist the scale relationship between the old and new



PENTHOUSE AND UPPER FLOORS



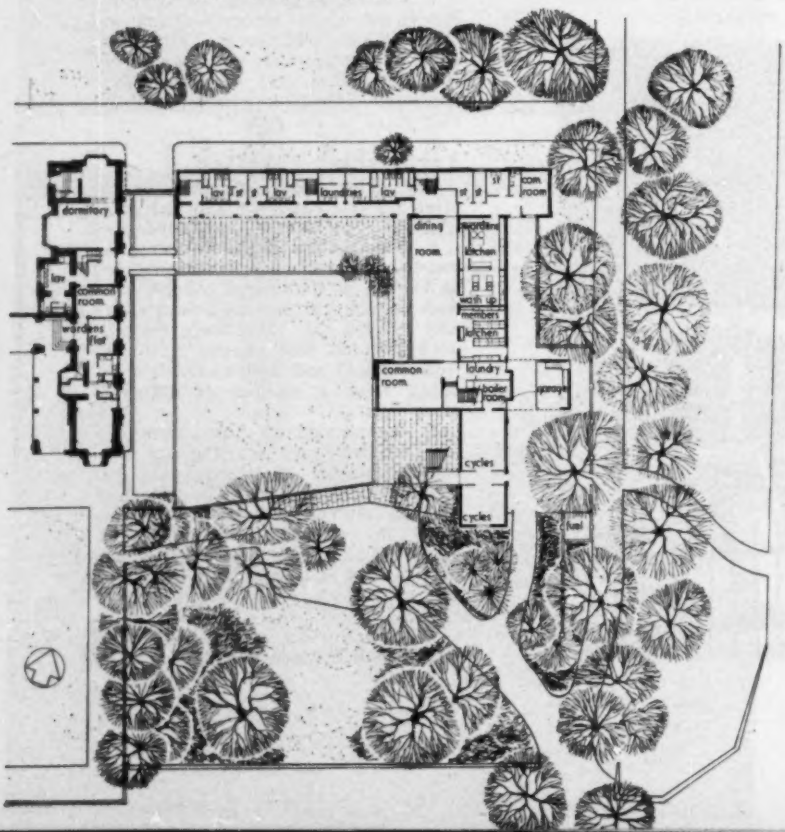
south elevation



GROUND- AND FIRST-FLOOR PLANS

The low level of the courtyard eliminates the need for anything but the simplest protective railing round the area and elsewhere the buildings are sited to form their own barrier. Below, a covered walkway with the restored east wing beyond

HOSTEL AT HOLLAND PARK



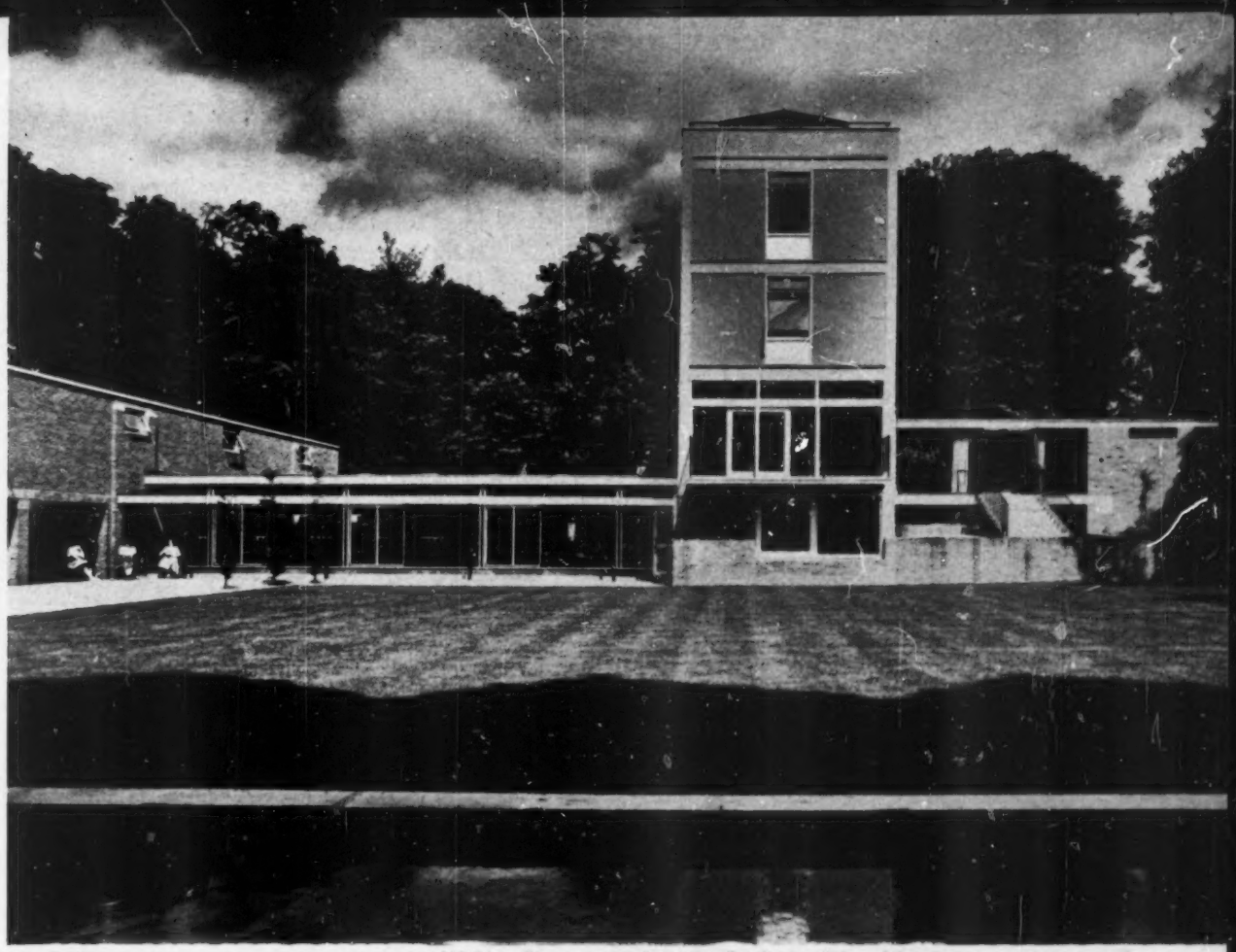
by building the latter in part at low level, cutting into existing levels where necessary, and building up the approaches. The tallest part of the new group has five storeys but is designed to be sensed as a three-storey building.

4. To arrange the buildings and the approaches to them to enclose the minimum possible area of park and to avoid as far as possible the cutting down of trees.

Architectural Character

External materials, largely brick and stucco, are those traditional to the locality. The "wall block" to the north, the yard walls to the east, the entrance block and the retaining wall around the sunk court are all built of 2in red bricks to match the restored east wing. This low-level brick architecture that wraps around the new court continues the basic architectural character of the site that extends past Holland House to the west—an architecture of orangeries, high brick walls and terraced levels with retaining walls.

The tall block at right-angles to the east wing, where it rises above plinth level, is (in deliberate contrast) faced in stucco. The structural frame



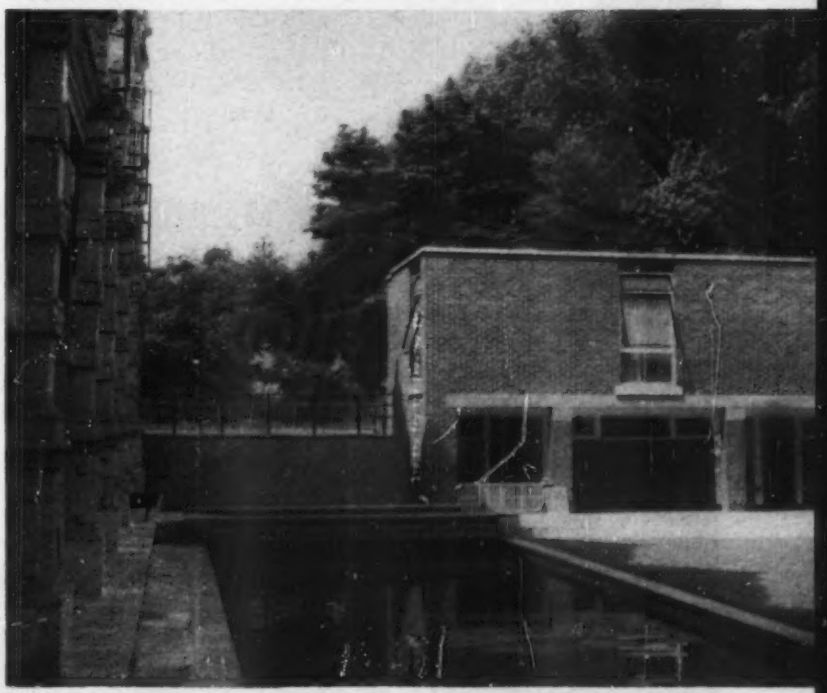
Within the courtyard an artificial canal has been formed at the base of the east wing to reflect its facade and to provide a sparkle of light in an area otherwise largely in shade. Below, the link between old and new

is expressed by the panel treatment which echoes the pilaster and brick pattern of the east wing, and it is painted in two tones of greyish-green. The penthouse is black.

Restoration and Conversion Works

The entire structure was found to be in a very decayed and unstable condition, due partly to inadequate shallow foundations on clay and partly to war damage and later neglect. The restoration works, which have been carried out with the guidance of the Historic Buildings' Section of the L.C.C. architects' department, has stabilized the two long walls by rebuilding the two ends on new foundations and by tying them back to two strong-points in the form of the rebuilt tower and the secondary stair enclosure. It was also necessary to rebuild the gables and reroof the entire structure.

Most of the interior had to be gutted to remove defective wood and the new plan bears little relationship to the original layout. It has, however, been possible to preserve the ground floor south room in its original form with a plaster vaulted ceiling.



NEW HOSTEL AT HOLLAND PARK

Two views of the spacious entrance hall. Above, a waiting area overlooks the common room window and courtyard beyond. Below, the reception desk (immediate left) with information kiosk on the far wall

Landscaping

The aim has been to interfere as little as possible with existing amenities and planting of the park, and to keep the new building discreet and subservient to the east wing by the careful use of levels and planting.

Furniture and Equipment

Loose furniture and curtains throughout the building have been provided or chosen by the Youth Hostels' Association.

General Contractors:
A. T. ROWLEY (LONDON) LTD.

(New buildings). HOLLAND & HANNEN AND CUBITTS (GT. BRITAIN) LTD.

(Restoration and adaptation of the old East Wing).

Consultant Engineers:
JENKINS & POTTER

Quantity Surveyors:
A. S. WILSON & PARTNERS

Sub-contractors and suppliers:
Brick Supplier: Sussex & Dorking Brick Co. *Cast Stone:* New Stone & Restoration. *Electrical:* Waring Withers & Chadwick. *External: Wrought Iron Railings:* J. Leaver & Sons. *Heating and Boilers:* Mumford Bailey & Preston. *Ironmongery:* Sharpe & Fisher. *Lead R.W. Heads and Pipes:* Norman & Underwood. *Metal Windows:* Wainwright & Waring. *Plumbing and Cold Water:* E.S.I. *Sanitary Fittings:* Boldings Ltd. *Stair Balustrades:* Morris Singer. *Stone Paving:* Concrete Stone Co. *Tiles and Slates:* Robert Adlard.

ARTS BUILDING AT EXETER

Architects: WILLIAM HOLFORD and PARTNERS

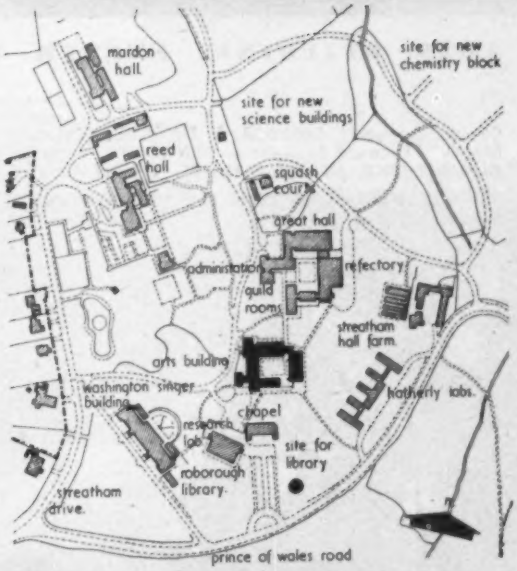
THE new Arts building represents the first instalment of accommodation to be provided on the Streatham estate, overlooking the City of Exeter, for the rapidly expanding University. It has been in use since last October when the arts departments, including classics, English, French, German, mathematics, economics and philosophy, together with the departments of geology and geography were transferred from their old city quarters.

Site

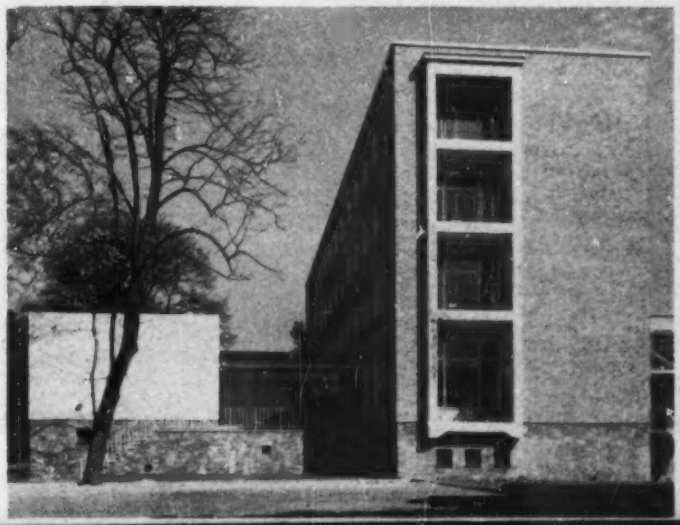
Beautifully situated on the crown of a hill in the wooded grounds of a Victorian mansion, the site slopes steeply down from the arts building on the east, south and west. The most economical and satisfactory block plan proved to be a compact rectangle, enclosing a central quadrangle. The ground floor is at natural ground level at the north end and advantage is taken of underbuilding at the south to dispose of the boiler room, fuel, cycles and general stores and men students' lavatories.

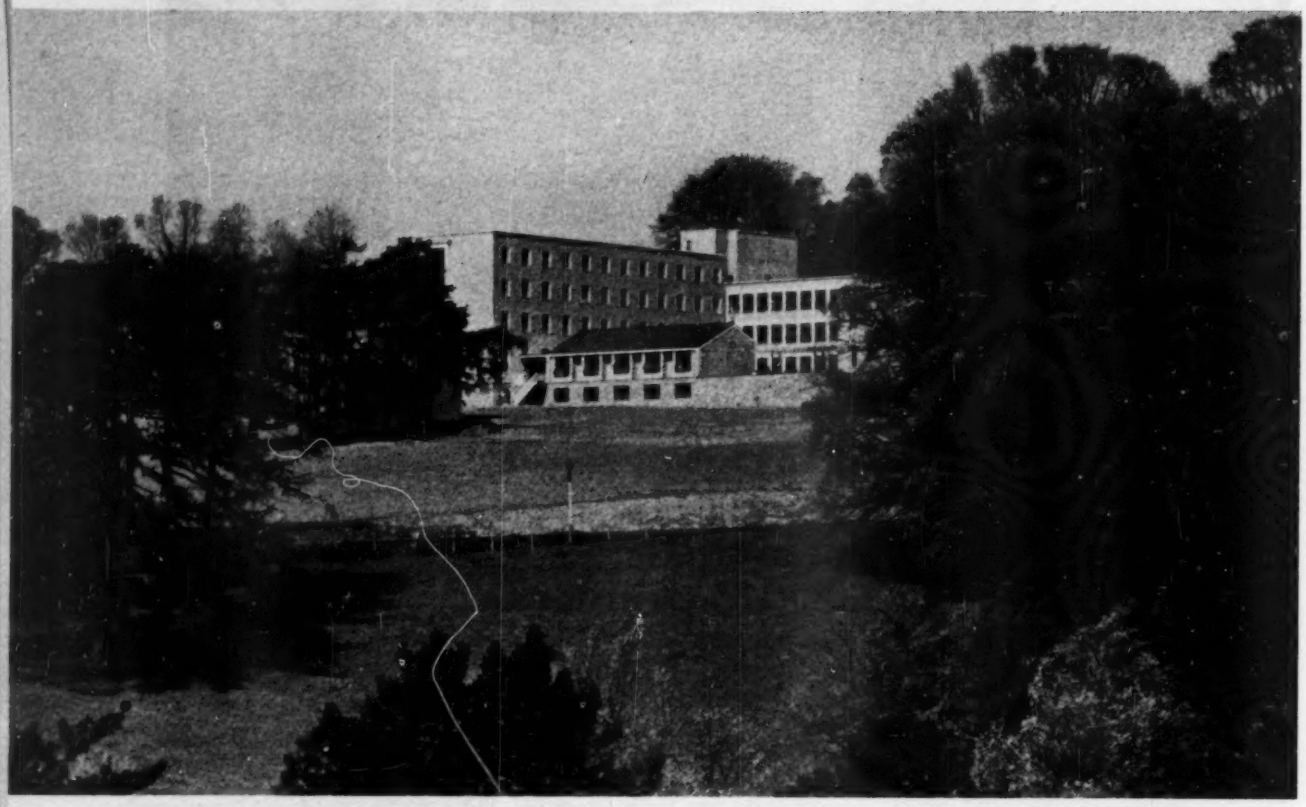
Accommodation

The biggest block of accommodation contains 70 private rooms for teaching staff arranged on three floors over an entrance hall. At ground level there is a lecture theatre seating 120 people. A senior common room at the south end is linked to it by a colonnade screening the main entrance.



Above the colonnade and terrace from the arboretum. Below, the south end of the staff block





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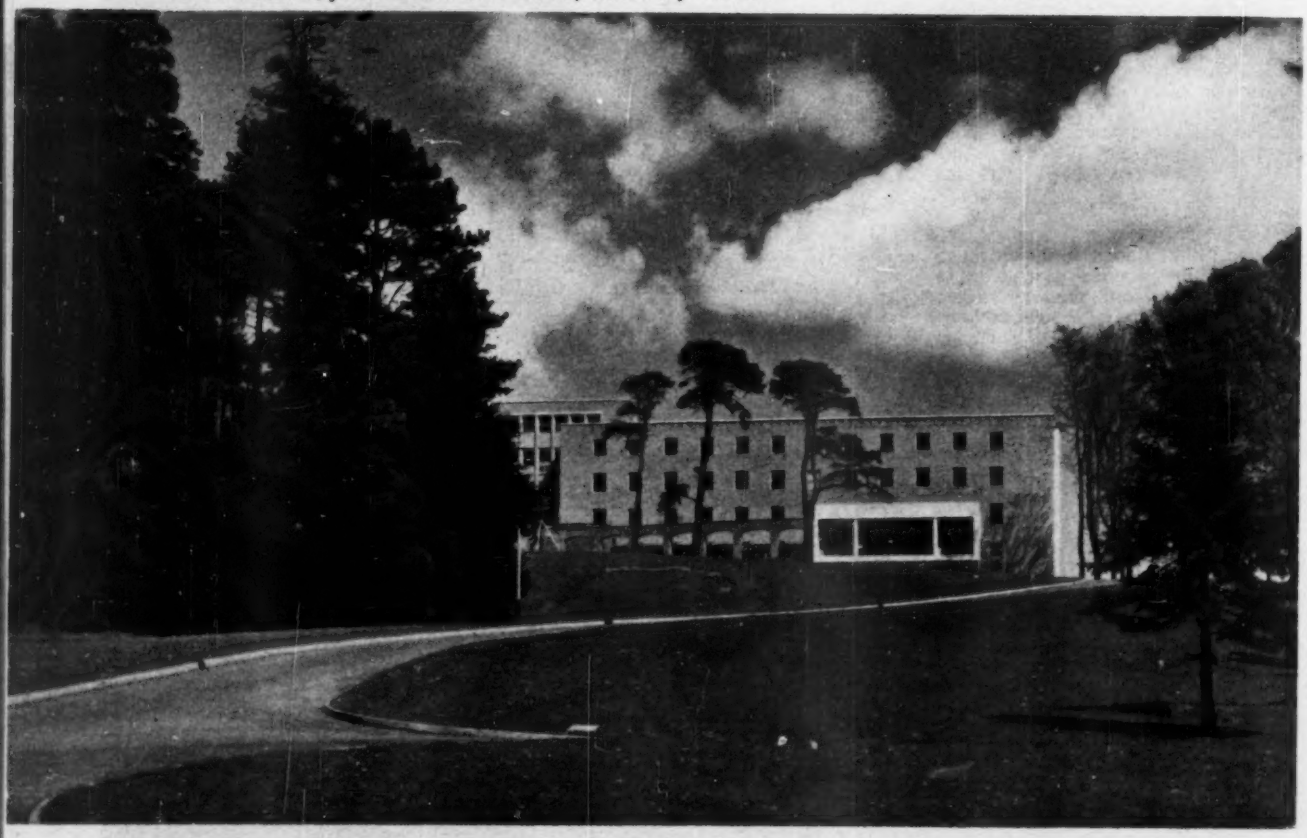
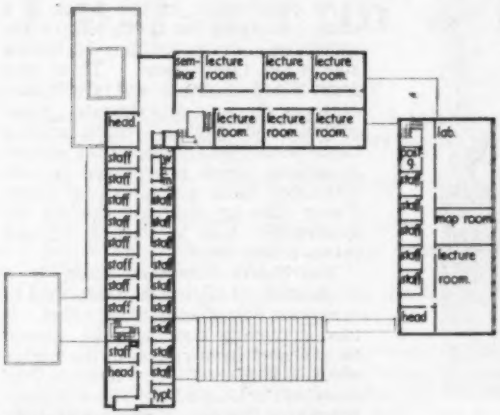
Quantity Surveyors: GARDINER & THEOBALD, Structural Engineer: FREDERICK J. BRAND. Electrical Engineer: T. DUNWOODY. Heating and Ventilating Engineers: C. MACKECHNIE, JARVIS & PARTNERS. Clerk of Works: C. J. WEBBER

Two views showing the new building within its landscape. Above, the quadrangle from the south-east seen across the Hoopern Valley. Below, the west front seen from the Queen's Drive approach

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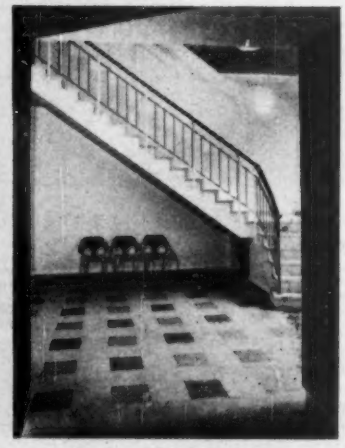
ARTS BUILDING, EXETER UNIVERSITY



Top, the senior common room. The teak table in the foreground was designed by Borge Mogenson, with black formed ply chairs by Arne Jacobsen. Moulded fibre glass chairs towards the back of the room by Charles Eames and made by Hille of London Ltd. Above, the lecture theatre with right, the main staircase. Below, the junior common room

At right-angles to this block is a wing occupying the north side of the quadrangle which contains 20 lecture rooms on three floors. These seat from 12-50 students and are shared between the arts departments. Geography and geology, being science departments, have specialized accommodation, which is arranged in self-contained units one over the other. These take up the east side of the quadrangle, with a statistics lecture room below them.

The junior common room is a single-storey building, and detached to minimize disturbance from noise. It has a pitched roof to add interest to the view from rooms in the higher block. A glazed lobby links it with the south entrance hall; and a pergola completes this side of the quadrangle.

Construction

The design of the building is based on a 10ft 6in bay for staff rooms, and a 12ft bay sub-divided into two 6ft units elsewhere. Except for the lecture theatre and senior common room, the frame of the building is in reinforced concrete. The main block, containing entrance hall and staff rooms and the west and south walls of the geology/geography wing are faced with 2in hand-made Sussex bricks. On the east side of the geology/geography wing and on both sides of the lecture room wing, the concrete frame has been faced with Portland stone, panels below the windows being filled with tiles.

Windows, when in conjunction with Portland stone or brick, are double hung aluminium sashes and elsewhere in teak. There is virtually no outside paintwork to be maintained.

Costs

The total cost was approximately £260,000 at 6s 9d per cubic foot.

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Information Digest

OFFICIAL PUBLICATIONS

● **British Standard Specifications,** from British Standards Institution, British Standards House, 2 Park Street, London, W.1. Telephone: MAYfair 9000.

B.S. 2900 (Draft). Modular Co-ordination in Building. Price 5s, plus postage.

B.S. 3030: Part 2: 1959. Standards for School Furniture.

B.S. 3071-6 : 1959. Nickel-copper alloys. Price : 4s (3071 and 3075), 5s (3072,3,4,6), plus postage.

C.P. 202 : 1959. Code of Practice for tile flooring and slab flooring. Price : 5s, plus postage.

B.S. 2900 is a draft standard distributed to members for comment. There are three bodies taking an interest in modular construction, being the Modular Society, the Building Research Station while the B.S.I. has set up its own investigating body. It seems likely that, despite the tardy start in this country in examining the merits of modular co-ordination about twenty-five years ago, the accumulated knowledge and experience may be greater than in any other country. The very fact that the three interested investigating bodies do not agree on all their tentative conclusions must give a fillip to research. The Modular Society and the BRS are represented on the B.S.I. Committee.

This draft is of Part II—"The Module and the range of Modular Sizes for Building Components". The history is given from the original proposal in modern times of the American, Alfred Farewell Bemis, who advocated a 4in module. After many years his choice is vindicated in this draft, although in the interim the general view was that 40in was more suitable.

The reason why the greater dimension was proposed was in fact simply due to confusion of thought. At a time when planning modules of 8ft 3in, 6ft, etc., were being adopted for prefabricated buildings, it was assumed that a planning module must be the determining factor and 3ft 4in, as such, had many advantages over larger dimensions. It will be remembered how difficult it was to obtain satisfactory junctions and corners when working to planning modules but investigation proved that the difficulties were largely the product of thinking of planning rather than of construction.

The draft is mainly concerned with horizontal dimensions and the 4in dimension must include any jointing space needed. There may, however, be variability in the dimensions of products, as with bricks, so these may be accepted under the module size but again with a limit which must be agreed.

It is not suggested that all components should be made in 4in units but in multiples of 4in which are convenient. Where at present materials are available, as in panel boards, in 24in and 36in widths, both would be retained but in addition intermediate sizes of 28in and 32in would be available. Clearly these suit the detail planning of buildings much better than panels of 40in width. Partition thickness is less of a problem.

It is important to note that this investigation is not undertaken in isolation from work in other countries. The European Productivity Agency—an offshoot of O.E.E.C.—is the co-ordinating body and adopted a suggestion from the U.K. delegation that a study programme be undertaken. Other countries functioning under this scheme are Austria, Belgium, France, Denmark, Germany, Greece, Italy, the Netherlands, Norway and Sweden. Canada and the U.S.A. are observers while the B.S.I. act as technical secretariat.

The next stage will be to adopt principles for the modular sizes of each component and as the qualities and characteristics of these vary so widely it is likely to be a difficult and protracted problem. Once done and the principles understood by architects and manufacturers the selection of components should be more efficient and specifying more precise. It is of interest that a 4in module agrees remarkably closely with the 10cm module under consideration in countries having metric systems of measurement, thereby assisting in the wide use of components and what are termed "Functional Elements", being constituent parts of walls and roofs, such as windows and tiles, both in this country and abroad so facilitating export and import trade.

B.S. 3030 was noticed in these columns in the issue of May 20, 1959, and deals with Standards for School Furniture. Reference is now made to it again because the B.S.I. have agreed that the performance tests set out in Part 2 of the B.S. should not be brought into operation until late in August of this year. The reason for this is that new apparatus and equipment is needed for the tests and it is not likely that all manufacturers will be equipped until the late summer. The B.S.I. will issue licences to manufacturers to be valid from October 1, 1959. In the meantime, furniture will be available in conformity with the previous B.S.S.

B.S. 301-6:1959 are six revisions of previous Standards for nickel-copper in castings, sheet, strip, tube, wire, rod and sections. The superseded numbers were B.S. 1525-1537, issued in 1949. There has been some amalgamation and some extension, while tolerances have been amended where necessary.

C.P. 202:1959 is also a revision and covers the laying of clay and concrete tile floorings, and brick, stone and cast stone floorings. Rising damp and cracking of floorings are two of the troubles referred to. Guidance on the influence of site conditions on the base and floor covering is given, pointing "to the need to use a damp-proof membrane". This presumably refers to those cases where the site is wet or there is water pressure; it would be unfortunate if this could be read to be a general recommendation. Cracking is due to variable stresses in the solid base (whether on ground or suspended) and the finish, which can best be overcome by using separating layers such as sand, felt, building paper on polythene film. Advice is also given on bedding in bituminous composition and dry bedding. Width of joint and expansion joints, inspection and maintenance (including cleaning) are also discussed.

● **Choice of Careers. No. 8. Stonemasonry.** Central Youth Employment Executive. Ministry of Labour & National Service. H.M. Stationery Office. Price 1s 6d net.

This booklet opens with the statement "No craft has a prouder tradition than that of the mason—the builder in stone". One wonders who decided that the mason was superior to the joiner/carpenter, bearing in mind Westminster Hall roof? The mason certainly gets more of the glory for his "poems in stone" but the worker in wood had his spectacular achievement.

The introductory paragraphs acknowledge that the demand for stonework is less than in previous generations but claim that as a facing material it is holding its own. The statement is also made that in stone districts houses are still being built in stone but avoids adding that the cost is usually considerably higher than the brick-built rendered house. The best agency for recruitment in any trade is the craftsman father and in view of the depressed state of the stone industry in the years following the war one wonders how many fathers recommend their sons to follow in their footsteps.

The brochure lists the specialists in the trade as Banker (or Hewer) Masons, Fixer (or Builder) Masons, Stone Machinists and the Setter-out. The function of the Banker Mason is explained as the man who works a rough block to the desired shape, from a drawing or templates. This specialist's work is given in considerable detail, with references to the tools used and types of stone worked.

The apprenticeship period remains at five years, despite the very considerable use of machinery in the trade. He

Information Digest (continued)

must, however, gain manual skill in dressing a stone so that he need not rely wholly on mechanical help. He also has training in the rudiments of fixing and setting-out. From this contact with the departments of the trade he is then in a position to decide which to concentrate on.

There is a good selection of photographs, including machining, carving and lettering.

● **Prefabricated Building.** A Survey of some European Systems. European Productivity Agency of O.E.E.C. H.M. Stationery Office. Price 12s. 6d.

This is one of the most informative O.E.E.C. publications reviewed by this column. It deals with work in many countries but mainly rather sketchily, while there are some comic misinterpretations such as that the "top member (of an r.c. window frame) can be *lengthened* to avoid using a lintel" but a second thought usually gives the proper sense, as *strengthened* was intended in the quotation. Now and again, however, one is defeated.

The subject is divided into sections, being Wood Systems, Steel Systems, Aluminium Systems, Clay Element System, Systems Using Large Size Hollow Blocks, Systems Using Storey-high Pre-cast Concrete Components, Systems Using Reinforced Concrete Skeletons, Heavy Element Systems, Special Systems, Systems Used in Scandinavia, Using Prefabricated Components in Traditional House Building, and Appendix.

On Wood Systems, the rapporteurs have not gone far enough: had they referred to the T.D.A. in this country they would have learned that there are many systems worthy of inclusion, as the A. & B.N. Special Issue on Prefabricated Buildings (25.3.59) demonstrated. Reference is made to the Porenit System in which there are wall panels formed of two skins of concrete reinforced (not armoured as the booklet says?) with galvanised wire netting separated by mineral wool, the only wood being the end posts which in adjoining panels are locked with a batten as a key, and the cills and heads. The Kübler seems to be similar. The L.C.C. Picton Street scheme is included because of the external two-storey wood panel filling to the r.c. frame and reference is made to a similar treatment in Göteborg. None of these uses wood as the main structural material so it is obscure why superior U.K. systems were overlooked.

Of Steel Systems, it is reported that in the U.K. light steel sections and metal cladding went into thousands of dwellings but the use has declined for economic reasons. The European Coal & Steel Community have instituted a programme which may throw more light on this matter as regards housing. The Stahlbau Rheinhausen System uses "C" (or is it "U"?) lightweight posts and horizontals of "cap" (top-hat?) section. The translation thereafter is odd but one gathers that infilling between the posts is of lightweight concrete panels, the posts being wrapped with glasswool and the voids grouted with breeze concrete. Floor beams appear to fasten to the posts and bear hollow pumice concrete slabs in small units, grouted. The system is most suitable for large-scale projects. The Fillod and Phenix systems are somewhat similar but have prefabricated plaster slab inner skins. Partitions are plaster slabs fair face two sides. Reference is also made to a school at Belper, Derbyshire, formed of cold rolled welded sections faced with concrete blocks and asbestos-cement sheeting, but the system is not named. The illustrations indicate that these systems are all steel framed and not simply curtain walling on other structural frame.

As regards Aluminium Systems, tribute is paid to the U.K.'s pioneer work but the examples are all continental, while none is strictly more than a facing system. The backings are various, being aluminium, compressed wood, reinforced concrete etc., with protection against condensation and heat loss as necessary. Some descriptions are given of the weatherproofing techniques.

The Clay Element Systems are extremely interesting. These are largely structural in the second stage, taking bearing on steel or concrete but the Italian R.D.B. blocks, which can be laid in walls in a number of ways, can, by using reinforcing rods, also become structural members. The Fiorio Systems of France uses quite large units with triangulated clay strut interior, which, unreinforced, can be used for walling and, reinforced, for floor panels up to 20 sq. m. The system otherwise relies on a structural frame, the wall and floor panels being placed by a crane running centrally in the building and lifting also the roof trusses into position.

The Systems Using Large Size Hollow Blocks have as their constituents pumice, slag, brick chips or mineralized wooden chips. In Germany over 40% of all walling materials are hollow blocks. In the Netherlands all blocks must conform to strength requirements, weight and nailability. In the German Trautsch System blocks are used to the limit, for walls, floors, partitions and pitched roofs. They are made of clinker and blast-furnace cement. There is no indication as to how reinforcement is used in the floors but on the other hand it is stated that no reinforcement is used in the pitched-roof construction. In cross section this is like a letter "A" with a high and slightly curved bridge which acts as a strut between the slopes, so preventing them from sagging. Erection is by supporting the ends of the blocks on temporary forms running up the pitches. The French Rouzaud-Présec Systems uses cavity blocks laid dry in two skins. The arrises are rebated to allow of pointing. Cavity wood-wool slabs are also available.

Systems Using Storey-high Pre-cast Concrete Components include Wates and Reema, Hebel and Thireaw-Morel being the others mentioned. In this section acknowledgement is made of the initiative of Sweden in developing lightweight concrete by using lightweight aggregate or foaming agents. The Wates System has an internal temporary system of tubular steel jigs to which the table-vibrated concrete units, with internally raised edges, are attached until grouted at the abutting edges. The interior lining is clinker block backing on the raised edges so as to provide air spaces. The panels are storey-height, as they also are in the Reema System, but in this the outer skin of each panel is 1¼in concrete, a 6½in cavity, an inner skin of 1in concrete and lining of ½in insulation board. It is stated that the shell of a pair of Reema houses can be erected in 4½ days by six men. The Heber System also has storey-height concrete panels and can either be load-bearing or infilling to a steel frame. They are made of pulverized quartz, cement, lime and aluminium powder. The system can be used in load-bearing walls up to four storeys. The F.A.N.A.L. System has again storey-height panels, of non-pressurized lightweight sponge concrete, faced with reconstructed stone. These are said to have a "1·2 ratio of density", therefore being effectively insulating. Such a ratio is not understood in the U.K.: could it have been meant for 1:2 which would at least indicate half the normal weight. When erected, reinforcement can be placed in the joints of panels for grouting in. It is necessary to leave the panels to dry out for several months before they are used. Other systems are very similar but have different insulation and surface treatments. The Granito System of Switzerland has the refinement that the vertical joints are caulked with tarred rope.

Of Systems Using Reinforced Concrete Skeletons, the Unity System receives first mention. This has R.C. posts at 3ft centres to which 12in high coloured concrete facing slabs are attached, while the inner lining is of clinker blocks. The Woolaway System is also noticed, the speed of erection being commented on. This has storey-height panels of 2in concrete externally and internally with 2in cavity. These are attached to r.c. posts. The Airey-Nemavo System, as used in the Netherlands, differs from the British version in having flush concrete slab facings attached by bolts to r.c. posts at about 2ft centres. Systems for greater heights are described, in-

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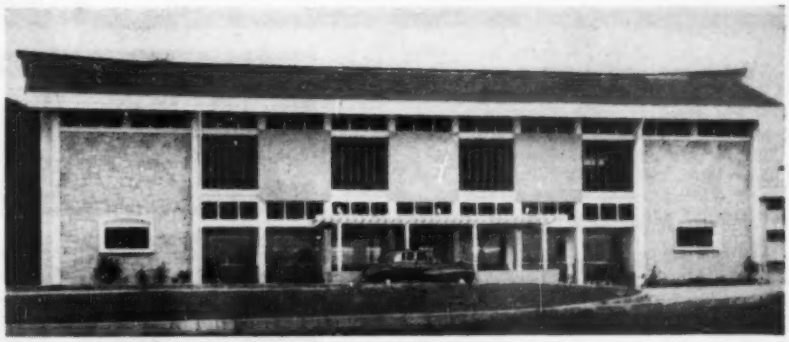

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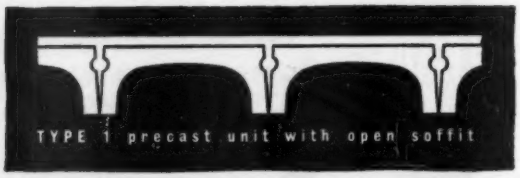

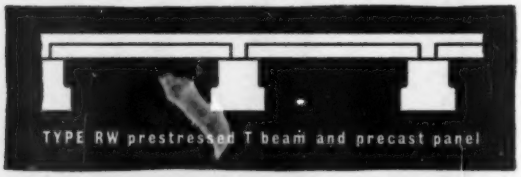

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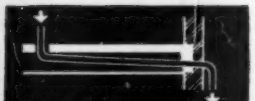

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cluding the Ciarlini and Granito methods.

Of the Heavy Element Systems the French Camus seems to be the most spectacular. Prefabricated room-size wall components are used for load-bearing walls and partitions. The internal plastering is applied to wall panels during casting by pouring on to the steel shuttering, followed by clinker concrete, then the facing concrete. They are taken from the moulds in 24 hours. The main casting shed of this concern covers 6,000 sq metres. Door and window frames and ducting for services are cast into the panels which are dried by a hot water system operating at 130°C.

Special systems include the French Pont de Sèvres experimental building site. The wall slabs were cast on the floor slabs and, hingeing on the bottom edge, were swung up into position. One very curious point is that originally the flights of concrete stairs were pre-cast in one piece—a very common practice in this country too—but the later arrangement has been to pre-cast only half-flights, or even the strings and steps separately. The Schindler-Goehner System is also described in which the principle is to eliminate the finishing trades as much as possible. Gypsum plaster formwork is used for columns and panels. The panels include ducts for services and usually are cast in a temporary factory on the site. Even the timber-framed roof is prefabricated complete and hoisted into position.

A cruciform system of structural walls from Denmark is referred to in certain systems used in Scandinavia but is not otherwise remarkable, the only point being that the external walls bear no weight. The Milestedet Rodovre project in Copenhagen carries the idea further but is almost conventional in this country in having transverse structural concrete walls and r.c. floor slabs spanning between these—box frame, in fact. Why these are included in this publication is a mystery, in that there is no prefabrication involved except as to any facing system that may be adopted. The Linköping method of Sweden is another matter, for external and interior walls are pre-cast but the floors are cast *in situ*. A cunning design for small balconies is illustrated where the back edge is bolted to, or bearing on the external wall, while the front edge is supported by two tension rods running up to the back edge of the balcony of the floor above.

In the rest of the book there is little of interest except for an uncritical description of the Stegleitung System of electrical installation. This consists of a flat cable having two or three conductor wires insulated by plastic sheaths and joined together with plastic webs. The thickness is about ¼in so is easily plastered over. Bends cause difficulty as the webs have to be broken. Fixing is by nailing direct to the wall. The report says that this method may save up to 55% of working time and 19% in cost of materials, "compared with installing insulated wires." What does this mean? And what about the other objections? It is doubtful if it is any cheaper than our own 2-3-wire plastic cable which is certainly more flexible, while the pattern with the flange is just as easy to fix. And the conductor wires are solid drawn which would not satisfy the I.E.E. Further, the system may be suitable for housing in the same way as our P.V.C. cable is, but surely not for schools and public buildings where it is now being used in Germany. In such buildings protection of the conductors from injury is important, so drawn steel or welded tube conduit is necessary, which at the same time allows of re-wiring when necessary without either tearing the cable out of the plaster or being compelled to accept unsightly surface work.

TRADE ASSOCIATION PUBLICATIONS

● **Tests on Wood Block Flooring Laid over Panel Heating.** Timber Development Association Ltd., 21 College Hill, London, E.C.4. Price 3s 6d, plus postage.

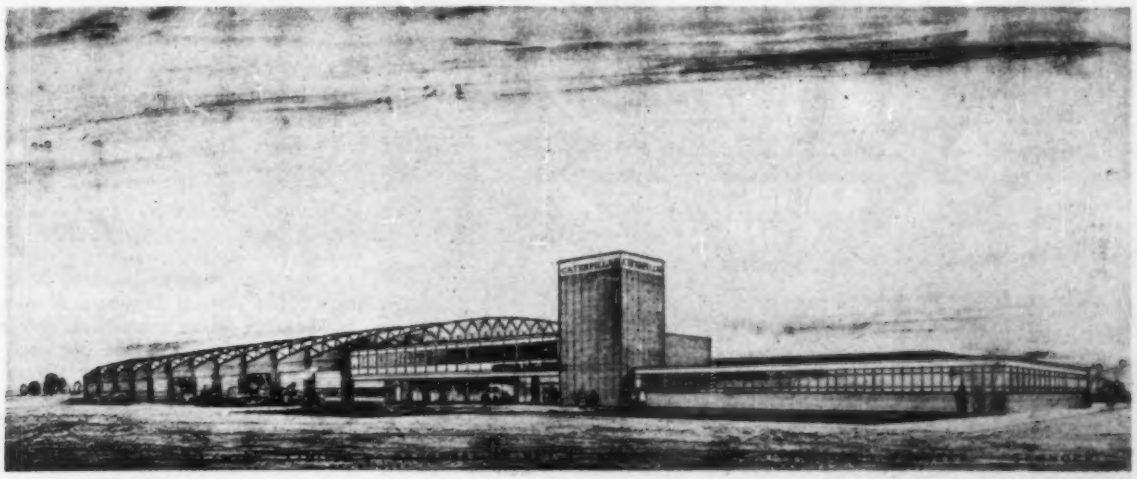
This report is a very informative paper which upsets some preconceived ideas and gives new and useful hints on wood block flooring on warmed floors. Tests were begun in 1952 and there were in all three tests, the first being in two stages. In these, the conditions of summer and winter were simulated together with variations in temperature and humidity. As air and block-surface temperatures might not tell the whole story, thermometers were also used on the "glue-line" so that, if the adhesive failed because of heat, the critical temperature would be known.

Two species of wood were used, being teak (presumably Tectona Grandis) and plain sawn English oak, all of 1in thickness. The idea was to use teak as the control.

Four kinds of adhesive were used, being high-melting point Bitumen Mastic, "W.B.3" Emulsion (a proprietary make), Casein Glue combined with bitumen emulsion, while the fourth was "Revertex", which is a proprietary compound of ciment fondu, sand and latex.

The moisture content of all the blocks when laid was about 7½ per cent and the temperature of the concrete base was 100°F. Although the moisture content was so low, some shrinkage took place but was not measured

Bowmaker (Plant) Ltd. have commenced a scheme, costing over £500,000, for the building of three new depots at Cannock, Cardiff and Exeter. The Silberkuhl roof system is to be used at Cannock, where the Service Department will provide an unrestricted clear span of 120ft and will be capable of supporting a gantry crane of 20-ton capacity. The total area of the new floor space at Cannock will be 85,000 sq ft. Architect: Alan R. Young.



Information Digest (continued)

before the next episode was started by shutting off the heating in the floor. A week later the teak moisture content remained at about 7 per cent while the oak had increased to 9 per cent with some swelling of the blocks. Unexpectedly, the teak panel it was that showed the greatest gain in dimension of ¼ per cent, whereas the oak panels laid on W.B.3 moved only one-tenth of this. Moreover, the other oak panels had no gain at all. At the end of this stage the teak panels had increased by ¼ per cent while the oak on W.B.3 gained slightly less and the other two oak panels remained stable. Moisture contents were: teak 7 to 8 per cent, oak 10 to 11 per cent. By increasing atmospheric temperature by 1 deg the moisture content in the oak dropped slightly but there was no effect on the teak.

Deductions from the test so far were that the bitumen mastic bedding of the teak exercised no restraint on movement, while W.B.3 was effectively holding the oak blocks until these reached over 10 per cent m.c. What is most significant is that the other adhesives (casein and ciment fondu/latex) prevented expansion. These two are not equally firm, however, for one of those lucky accidents happened in a leak developing in a water container one week-end which resulted in swelling of some of the blocks. Those on casein rose, breaking the bond to the subfloor, whilst the wet blocks on ciment fondu/latex remained firmly attached to the base.

The second stage of the first test was to subject the floors to much more severe conditions. For this the panels were placed out of doors but protected from rain and wind. Here again teak on mastic and oak on W.B.3 gained much the same amount until the M.C. rose above 12 per cent in the oak. The other panels, however, laid on casein and ciment fondu/latex showed practically no gain.

The second test was wholly concerned with oak, each panel being laid on one of these adhesives—"Floortex", plaster/casein/latex, "Slough" and "Evo-stik", the latter being mixed with sand and Portland cement. The testing equipment was improved to give more accurate control and readings.

In this test also the blocks were reduced to 7½ per cent m.c., while the sub-floor temperature was between 80 deg. F and 100 deg. F. The test started with a warm floor, then heating was shut off, then in the last stage restored. The result was that the adhesives all, with the exception of the plaster/casein/latex cement, restrained to a remarkable degree the movement of the panels, the overall gains being negligible. The casein cement failed at an early stage and in addition allowed the blocks to gain a higher moisture content.

Comments are made on the ease of application of the proprietary adhesives. Further tests on buildings where these have been used are to be carried out.

● **Safety Guide for Works of Civil Engineering Construction.** The Federation of Civil Engineering Contractors, Romney House, Tufton Street, Westminster, S.W.1. Price 1s, plus postage.

This guide has been issued to 700 members of the federation and should be distributed to all in charge of site works. It is in the form of a small, slim booklet and gives recommendations resulting from analysis of over 3,000 civil engineering accidents.

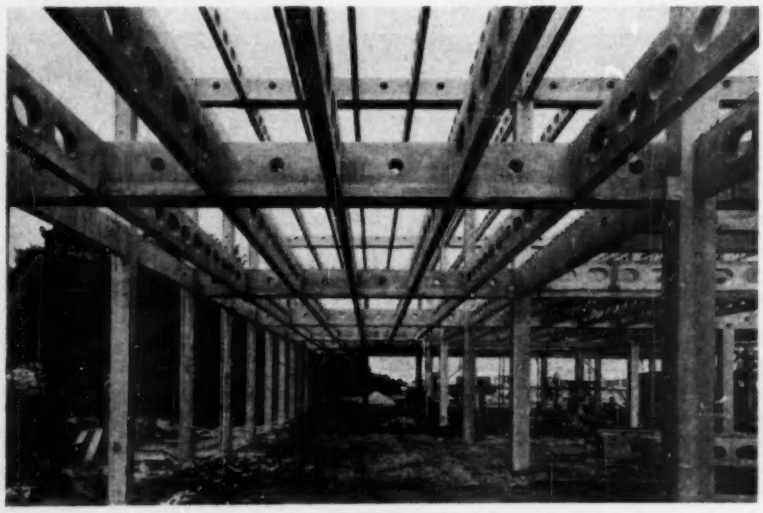
The greatest percentage of accidents is caused by falling, followed closely by those caused by plant. Only slightly lower is that of accidents caused by materials or objects moving or being moved. These together account for over 60% of all accidents. The first section deals with safe working conditions, including guarding openings in floors, removing projecting nails and protective fencing of hazards. The second includes scaffolding and ramps, the third materials, then excavations, ladders, explosives, protective equipment, lifting and appliances. In the appendix, references are given to the Factories' Acts, 1937 and 1948, the Electricity Regulations and other legislation affecting civil engineering works.

● **Domestic Gas Appliances, List No. 7.** The Gas Council, Murdoch House, 1 Grosvenor Place, London, S.W.1.

This list, too, cancels previous issues. It lists cooking appliances, refrigerators, space-heating appliances, water heaters, wash boilers and washing machines, clothes airing and drying cabinets and sundry appliances. None of these is dimensioned, nor, of course, are consumptions given, although it ought to be possible to give these for space heaters. The range of refrigerators is from 1·5 cu ft to 7·6 cu ft. Where washing machines are electrically driven this is stated. Names of makers are given against each appliance, there is an index of manufacturers at the beginning and all have their addresses.

● **Domestic Electrical Appliances, No. 7.** Recommended list for Local Authority Housing. The British Electrical Development Association, 2 Savoy Hill, London, W.C.2. Price 2s 6d, plus postage.

This list which supersedes previous issues carries the authority of the Ministry of Power on whose behalf the appliances have been tested. These include cookers, home



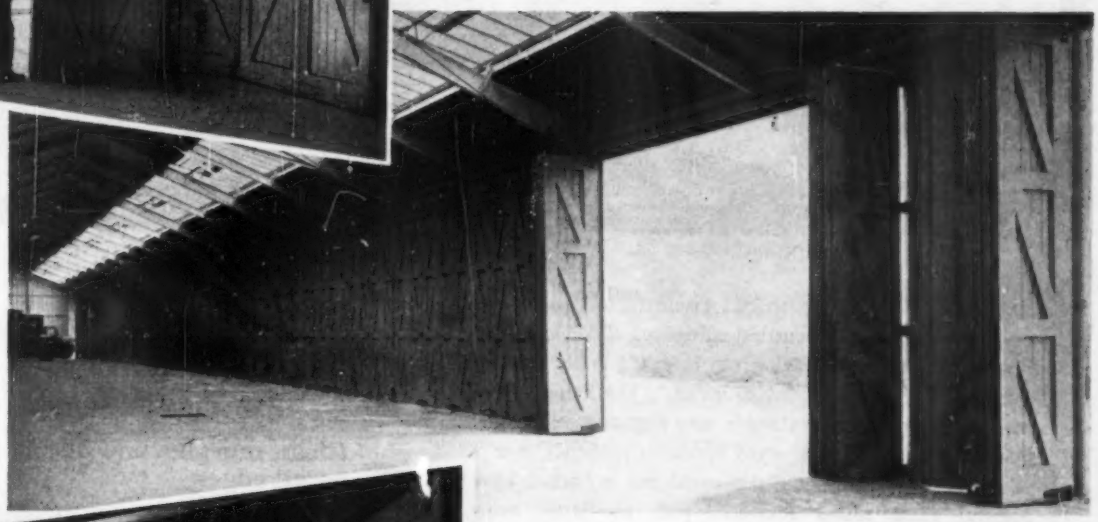
Precon Ltd. manufacture, and where required design, pre-cast, prestressed and pre-cast reinforced concrete components for single or multistorey frame buildings. The vertical members of such buildings are almost always of reinforced concrete construction and the horizontals either prestressed or reinforced. The Precon service includes the delivery on site and the erection of the frame. Facilities are available for this service in all parts of Great Britain.

Famous
'TANGENT'
Gear

for DOORS SLIDING AND FOLDING *and*
DOORS SLIDING ROUND THE CORNER

up to 20 ft. high and for any width of opening

Seen in successful operation the world over



Despatch bays of William Jackson & Son Bakery, Stockton-on-Tees. Opening 84 ft. wide overall.

18 ft. high, 'Straight Run' and 'Tangent' doors at the Maidstone and District Motor Service Borough Green Depot.

STRAIGHT-RUN

SINGLE - DOUBLE - TRIPLE
lines of Tracks for all Industrial Doors in either wood or metal

TOP TUBULAR TRACKS *(10 sizes) to suspend doors and carry the weight.*

STERLING BOTTOM ROLLERS *to take the weight on the ground.*

Qualified Technical Representatives in all areas—readily wait upon you—without obligation.

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SLIDING DOOR GEAR

for any Door, Window or Partition that slides or folds

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H.124

Yes, this Celotex Acoustical Product combines **fire resistance** with high acoustical efficiency. Celotex Incombustible Metal Acoustic Tiles can be fitted to any type of soffit and are extremely easy to install. The fixing is fast, invisible and positive, resulting in very low installation costs. Scientifically designed to yield optimum efficiency over a wide frequency range, the perforated tile is backed by a Mineral Fibre sound absorbent pad, the latter being separated from the inside of the tile by a small air-space.

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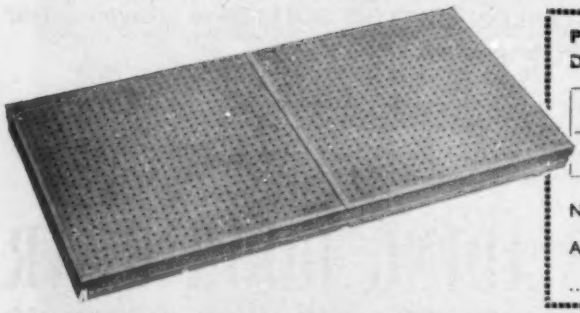

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C 108

CELOTEX LIMITED, NORTH CIRCULAR ROAD, STONEBRIDGE PARK, LONDON, N.W.10. Telephone: ELGar 5717 (10 lines)

Information Digest (continued)

laundry appliances, kettles, refrigerators, space heaters, water heaters and miscellaneous appliances. None of the cookers is dimensioned, nor the laundry appliances but drying cabinets and drying cabinet heaters are dimensioned and, in addition, state the consumption. The range of capacity of refrigerators extends from 1·5 cu ft to 9·1 cu ft, so dimensions would have been helpful. Space heaters and other warming appliances state consumption and whether portable or fixed.

The name of the manufacturer is given against each appliance, and there is also an index of manufacturers at the back, but no addresses are given.

TRADE PUBLICATIONS

● **Technical Publications. The Case for a Specialist Service.** Technivision Ltd., Braywick House, Maidenhead, Berkshire.

Who writes those trade pamphlets that daily shower through the architects' and builders' letter boxes? Ignoring the poverty of design of many, the obscurities in the writing and indifferent illustrations put off many recipients whose attention they were intended to catch. It is not only the cheap and pathetic that fail, but very often, also, the expensive and elaborate miss their target and, with some feeling of dismay, join the others in the waste-paper basket. This column could tell a few stories (and sometimes does).

The booklet, now noticed, argues in favour of specialist writers being employed on all sales and service literature for civil engineering, electrical, electronic, electromechanical, mechanical, medical and pharmaceutical trades. It will have been observed that the largest of them all—the building industry—has been left out. Yet it is obvious that the producers are conscious of its existence or they would not have sent this column a copy of their brochure.

They explain that technical authors are not journalists nor are they publicity copy-writers with a gift for using technical phrases. That is true but not sufficiently recognized. Some of the most useless brochures are those expensive productions of copy-writers and advertising agencies.

The illustrations show the clear quality of the line drawings used to accompany technical writing, including those admirable exploded details where the assembly sequences can be followed so easily.

The firm also make models, write reports on facts and figures and undertake the printing. Their staff normally work in close association with the manufacturers to the extent of working on their premises.

● **Precon. Service for Architects, Consultants and Contractors.** Precon Ltd., Harbour Road, Rye, Sussex.

The service offered is the design of pre-cast reinforced concrete framed structures, floor and roof slabs and concrete facing slabs. The firm have their own design team but are equally prepared to work with consultants and to submit competitive designs and tenders.

In the multi-storey construction, the columns are of reinforced concrete, while the beams may be either normal reinforced concrete or prestressed concrete. These may incorporate holes for services or voids to reduce weight. Floor slabs available are five in number, one being prestressed box panel 18in wide, with lightweight concrete core, another is a trough section of 24in width. There is also a prestressed plank floor, each unit being 18in wide which in short spans does not need compression concrete on top. When necessary, continuous spans can be arranged by incorporating reinforcement in the concrete topping. There is also a normally reinforced box panel with a lightweight concrete core which can be made from 18in to 7ft 6in wide.

Another product is the range of portal frame r.c. structures, having r.c. columns with cranked heads on which are bolted the r.c. main rafters, pin-jointed at the ridge. Spans range from 15ft to 100ft. Alternatively, a somewhat similar design is offered where the main rafters sit directly on the column heads but a saddle-backed beam may be used if preferred. Roofs may consist of concrete purlins and concrete slabs.

Precon blocks are available from 20lb to 100 lb/cu/ft. These can be cut with a saw. Facing slabs of exposed aggregate are made and these can have lightweight concrete backing cast on.

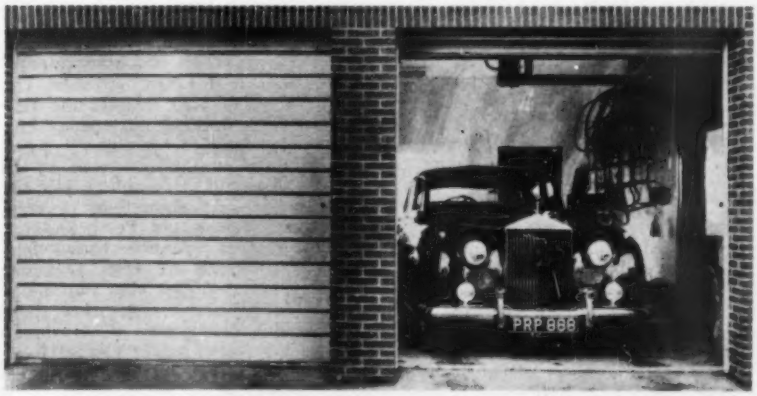
There is a considerable export business and this experience results in adequate measures being adopted to protect the pre-cast units in transit.

● **More Interiors by Heal's Contracts.** Heal's Contracts Ltd., 196 Tottenham Court Road, London, W.1.

The enlightened policy of this firm is well known and the work illustrated gives some idea of the quality of their work, through architects or by direct contract. While furniture and furnishings are the commodities usually associated with this firm the brochure also shows that painting and decorating for special requirements can also be undertaken, together with structural alterations. There is also the ecclesiastical department, which has carried out work at Guildford Cathedral and in the rebuilt City Temple.

● **Services from Pyrene Metal Finishing Division.** The Pyrene Company Ltd., Great West Road, Brentford, Middx.

It is probably no fault of Pyrene that fire extinguishers are the immediate thought on seeing the name. In fact the company's interests in other departments have a history of over 30 years, when the "Parkerising" of metals was introduced. The rust-protection of cars and similar sheet metalwork has introduced the laymen to "Bonderising" but that and "Parkerising" are only two of the pre-



The Glydover door, manufactured by Bolton Gate Co. Ltd., is constructed from rust-proofed steel. When fully open, the door leaves the garage entrance clear on all sides. It slides up under the roof and travels on nylon pulleys along a curved track. Various automatic systems of operation are available if desired. Standard size is 8ft wide by 7ft high

Information Digest (continued)

treatment processes available, not only in this country, but also in other parts of the world.

The building industry is very much concerned with the protection of sheet metals and Pyrene have processes for application to iron, steel, zinc, cadmium and aluminium surfaces. "Pylumin" provides a key for a subsequent paint finish on aluminium and its alloys or the "Pyluminized" surface can be left unpainted. There is no reference in the booklet to the aeration of cement for lightweight screeds and blocks, as might have been expected.

● **Tylox Flexible Joints for Concrete Pipes.** Mono Concrete Co. Ltd., Horton Road, West Drayton, Middx.

The principle used in this joint arrangement has been in use in the U.S.A. for 65 years and now the Mono Company has acquired the rights for this country. It is in its essentials very simple, merely a ridged rubber ring inserted inside the collar of the pipe where it is secured with a permanent adhesive. When the joint is made the male end of the jointing pipe presses the ridged rubber inwards, making firm contact with the spigot end. A lubricant facilitates entry. The joint remains watertight up to 9 deg. splay. The joints are also available for manhole rings. No pointing of the joints is necessary as it is claimed that the rings are as enduring as the pipes. Where industrial effluents have to be conveyed, special rings are available.

● **Firm-Lock Scaffold Fitting.** Scaffold Products (Coventry) Ltd., 20-28, Coventry Street, Coventry.

This is a wedging device for attachment to scaffold tubes. There are two parts, a fixed shoe and a sliding shoe. The fixed shoe, attached to a scaffold tube, is set against the face to which the scaffold is to be raised, then the sliding unit is brought along to make contact with the opposite face, the anchor bolt is screwed tight, then the lever used to slide the rubber-faced pad hard against its abutment. The fixed shoe has a similar pad. For fixing to a chimney stack the device gives firm grip while the use of wood taper wedges is avoided. There is also a "roof pitch coupler" which enables verticals and raking tubes to be attached to the first-fixed horizontal tubes. It is not claimed that the device, when used for chimney repair scaffolding, takes all weight of tiling and slating but the roof-pitch couplers are more easily padded than the usual scaffold clip.

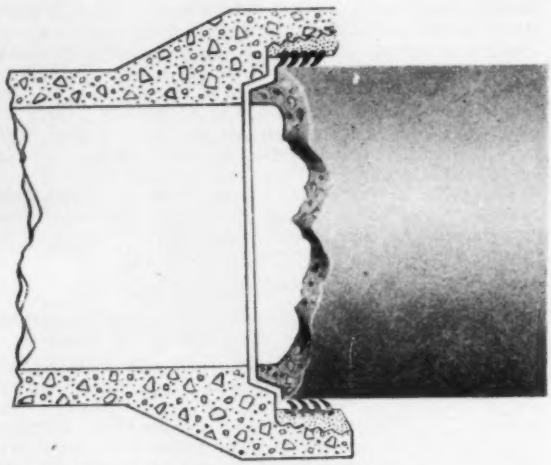
● **Pipe Bending Manual.** Chamberlain Industries Ltd., Staffa Works, Staffa Road, Leyton, London, E.10.

The title of the handbook is "Press Bending" but its contents are wholly devoted to pipe bending. The principles are explained in Chapter I, but it is pointed out that the risk is always that the pipe, in bending, will become elliptical. Hot and cold bending are discussed and the object of sand filling for certain work is explained or alternatively (for small pipes) filling with a low-melting alloy. "Compression" bending is used for thin-walled tubes where the radius is more than 3½ times the diameter, while "draw" bending is suitable for smaller radii. The "Staffa" machine is hydraulically operated, on the ram principle, bending the pipe by advancing a shaped former by manual pressure, working the ram hydraulically.

CATALOGUES

● **Furniture.** Ernest Race Ltd., 22 Union Road, Clapham, London, S.W.4.

The latest additions to the Race range are shown on the Information Sheet, being upholstered chairs, settees and footstools and light steel tubular chairs and tables



The Tylox Flexible Joint

using plywood, shaped, for backs, seats and tops, while the rocking chair has upholstered seat and back. Also available is a range of tables with plywood tops and die-cast aluminium legs.

● **Chipboard.** British Plimber Ltd., Dovers Corner, New Road, Rainham, Essex.

This company has issued a new brochure following the introduction of ¼in thickness boards, with wood veneer when required. The maximum panel size is 16ft by 4ft but when veneered 8ft by 4ft. Veneers available are oak, mahogany, sapele mahogany, walnut and plain sycamore, either both sides or with balancer veneer on reverse. These are also available in the ¼in thickness boards.

● **Mastics.** Evode Ltd., 82 Victoria Street, London, S.W.1.

Another brochure has been issued dealing mainly with Evode Evascon which can be used to replace badly worn floorings. A priming coat is first used, the wearing surface being made of Evascon, Portland cement and sand. Rolling on completion increases the resistance to wear.

● **Electrical.** Falk Stadelmann & Co. Ltd., 91 Farringdon Road, London, E.C.1.

A pamphlet has been issued illustrating the Olympus range of decorative fittings, in pendant and ceiling forms. Basically these are truncated cone glasses, with shallow metal galleries for ceiling fitting, to which are added various metal skirts and alternative galleries.

● **Ventilation.** Greenwoods & Airvac Ventilating Co. Ltd., Beacon House, Kingsway, London, W.C.2.

Sheets have been issued for this company's binder catalogue. These show the Skyvent in which rectangular glass is laid to a slight fall on an aluminium frame. The upper frame has an aluminium skirt to weather the vent when raised on its hinges for admitting air. Sheet aluminium liners to the roof openings are available, when weathering to the roof material upstand is given by an aluminium drip riveted on all round and lapping over the upstand. Another sheet shows their aluminium or steel kerbs, solid or ventilating, for glass and Perspex dome lights, either circular or rectangular. Another shows their multi-panel fixed louvre units which are 12in, 18in and application to iron, steel, zinc, cadmium and aluminium throughout. Bird guards are available. Another sheet gives details of their Roofline Extractor, which stands above the roofing 14½in and fits into patent glazing bars, although also adapted for normal sheet roofings. All sheets give full dimensions and fixing information.

M

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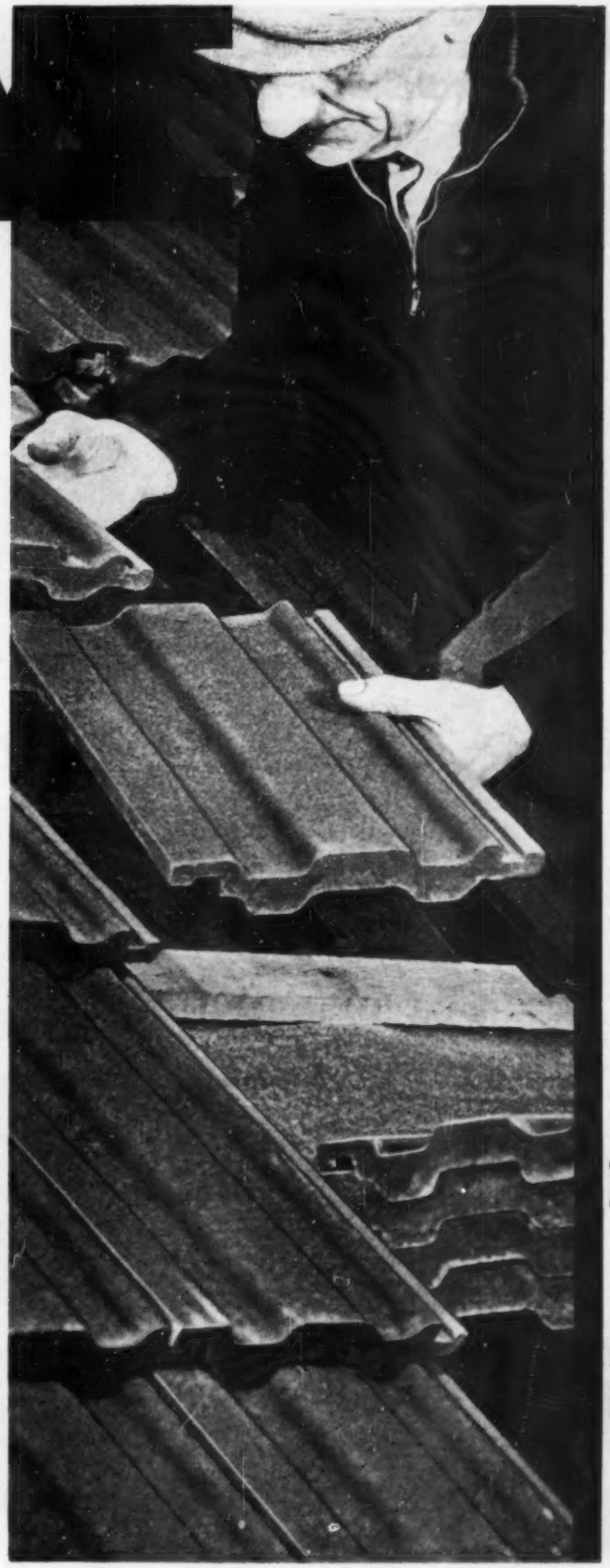

Charlie Francis, a Marley tiler for more than 25 years, fixing Ludlow Antique roof tiles.

Marley are the largest roof tile manufacturers and fixers in the world, offering the widest choice of colours in plain, single-lap, and interlocking types. All Marley tiles are covered by the dual guarantee that (1) they will not laminate or decay for 50 years, and (2) when fixed by Marley Craftsmen they will be maintained free for 10 years.

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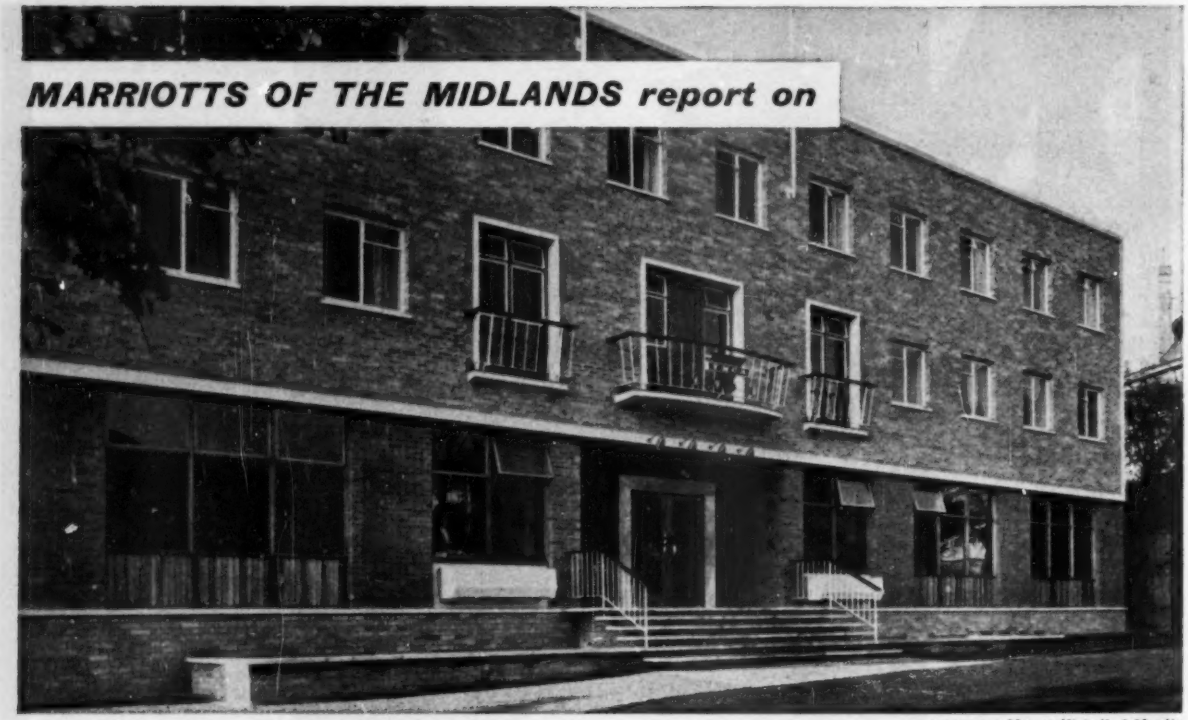
MARRIOTTS OF THE MIDLANDS report on



ARCHITECTS: Messrs. Nicholls & Moodie

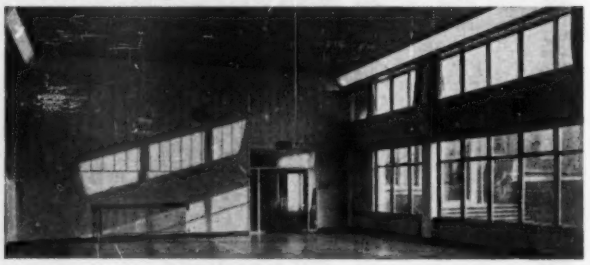
Building to good purpose

This new Y.M.C.A. residential building in Northampton, which was officially opened by H.R.H. The Duchess of Gloucester, is one more project recently completed by Robert Marriott Limited. It is one which Marriotts are particularly proud of for—besides the pleasure of executing a fine design—there is a deep satisfaction in doing a good job for a good purpose.

A good job: this is the visible testimony to Marriotts with every new project the company completes.

With an organisation of a national stature, Marriotts of the Midlands restrict their operations to within a reasonable radius of their headquarters at Rushden. The result: close control of local labour resources, and a direct control of the work. These two factors are reflected in economy in cost, and the quality and speed of the work.

Interior views of the Lounge and, below, the Recreation Hall.



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Industrial Notes

● Mr. F. McPherson and Mr. J. K. W. MacVicar have been appointed joint managing directors of Thermotank Ltd. The former managing director, Mr. I. M. Stewart, remains chairman of Thermotank, but has resigned from the duties of managing director in view of his appointment as chairman of Hall-Thermotank Ltd., the amalgamated company which it is proposed to form with J. & E. Hall Ltd.

● The Birmingham office of Matthews & Yates Ltd. has been transferred to larger premises at Smithfield House, Digbeth, Birmingham, 5 (telephone: Midland 7284).

● On July 4, 1959, the Birmingham office of The Ruberoid Co. Ltd. will move to Central House, 75 New Street, Birmingham, 2 (telephone: Midland 3181/2). The area covered by this office includes the counties of Warwickshire, Worcestershire, Gloucestershire, Staffordshire, Shropshire, Merionethshire, Montgomeryshire, and part of Denbighshire.

● Mr. Donald Outhwaite has been appointed regional officer for the Coal Utilisation Council's north-western region, which covers Lancashire, Cheshire, the High Peak district, Westmorland and North Wales.

● The complete offices and works of two companies in the Carter Group have been transferred from 29 Albert Embankment, London, S.E. 11 and are now functioning fully at new addresses. Carter & Co. London Ltd. have moved to 157 Clapham Road, London, S.W. 9 (telephone: Reliance 1471), and the Marbolith Flooring Company Ltd. are now at 159 Clapham Road, London, S.W. 9 (telephone: Reliance 2062).

● H. C. Janes Ltd., of Barton, Beds, have appointed Mr. Roy Cato as technical representative for Modolite joinery, to cover S.E. London, Kent, Surrey and Sussex.

● S. Leboff Ltd., of 19 Virginia Road, Shoreditch, London, E.2 (telephone: Shoreditch 7407/8/9), have acquired two further telephone lines, Shoreditch 4526/7, making five in all.

● Dussek Bros. & Co. Ltd., are to pay an interim dividend of 5 per cent, less tax, on their ordinary shares on account of the year ending October 31, 1959. This dividend will be payable on July 10 to shareholders registered on June 26.

Dexion Hellas, the Greek member company of the Dexion Group, designed and constructed the slotted angle roof-framework for this cinema in a suburb of Athens. The roof structure rests on a reinforced concrete frame built into the outer brick and cement walls of the cinema. Exterior cladding is corrugated aluminium sheet. Underside trusses are faced with Celotex acoustic board.

● Mr. H. E. Peirce, O.B.E., J.P. managing director of Hall & Co. Ltd., of Croydon, and vice-president and chairman of the Executive Council of the National Council of Building Material Producers, has been elected chairman, for the seventeenth successive year, of the Sand and Gravel Association of Great Britain.

● Baird & Tatlock (London) Ltd. have been appointed contractors for the supply of all the laboratory apparatus, chemicals and equipment for the laboratories of the Durgapur Steelworks. This will be handled in conjunction with their agents in India, Toshniwal Bros. (Private) Ltd.

● The banquet designed to celebrate the bi-centenary of Carron Company, the Falkirk ironfounders, was split into three equal sessions and held on May 26, 28 and 30. Altogether, the guests numbered 3,000, including employees of the company, business friends and distinguished visitors. The guests were addressed by Mr. E. J. Leaver, manager for Carron Company, Senator Arthur W. Roebuck, Q.C. of Ottawa, Canada, who is a direct descendant of Dr. John Roebuck, one of the founders of the company, and Mr. C. H. Burder, M.B.E., Proeses of the General Court of Carron Company.

● Alarm Central Stations Ltd., of 24/26 Great Queen Street, London, W.C.2 (Chancery 2888), is the title of a newly formed company whose shares are equally held by Associated Fire Alarms Ltd. and Auto-Call Ltd. At the outset, the new company will be principally concerned with developing existing call stations in London and a number of provincial cities. Where such call stations or watchrooms operate, clients of A.F.A. will be connected thereto, instead of directly to the Fire Station, as in the past. The established call stations will continue to deal with burglary alarms. Mr. C. Anstice Brown, chairman of A.F.A., is chairman of the new company, and Mr. W. A. McPhail, chairman of the Auto-Call, the vice-chairman.

● Sissons Bros. & Co Ltd., of Bankside, Hull (telephone: Hull 41431), have formed a new Special Treatments Division (Floors). The object of the new company is the marketing of Sissons' Floor Dressings and Barrier Seal, Floor Paints and ancillary products manufactured by the company. Appointments within the new company include: Mr. J. P. Millington, technical sales manager; Mr. W. H. Hughes, commercial sales manager; Mr. N. B. Orr, technical sales representative in Lancashire; and Mr. J. B. Homer, technical sales representative in the Midlands.

NEW PRODUCTS

In this feature are reviewed new lines introduced to the building industry for the first time and additions or improvements to existing ones. Any advantages claimed for a product are from information supplied by the manufacturer

New Sliding Door Gear (A)

Hendersons have introduced a new and improved range of their Zed tracks, sliders and channels. These are precision machined from high density vulcanised fibre and are adaptable for a variety of light cupboard, cabinet, showcase and frameless glass sliding doors. Four sizes of track are available in either 4ft or 6ft lengths, and in two types, the grooving-in type with serrated edges and the surface fixing type which are holed every 6in for panel pins. Tracks are supplied in tubes of 25, or in boxes containing 100 of any one type and length. One carton of 50 sliders is sufficient for each tube of track. To complete the Zed range, single double and triple channels are introduced for frameless glass, plywood and hardboard sliding doors. These channels have a specially radiused base for minimum point contact to reduce friction and improve the sliding action. The inside groove of the bottom channel is ¼in and of the top channel, ⅛in. For ease of identification the top channel is produced in grey. Supplied in boxes of 25.

P. C. Henderson Ltd., Tangent Works, Harold Hill, Romford, Essex. Ingrebourne 41111.

Readers' Information Service, Ref. A. Date 24/6/59.

★

New Shaper Blades

Half-round blades are now available for Stanley shapers. These blades will fit easily into both shaper-planes and shaper-files and are suitable for shaping, trimming, smoothing or filing concave surfaces. They have 500 shatter-proof teeth, the same number as the flat blades, and it is claimed that they will tackle anything from wood to mild steel in the same way. These new half-round blades cost 3s 6d each.

Stanley Works (G.B.) Ltd., Rutland Road, Sheffield, 3. *Sheffield* 25380.

Readers' Information Service, Ref. B. Date 24/6/59.

★

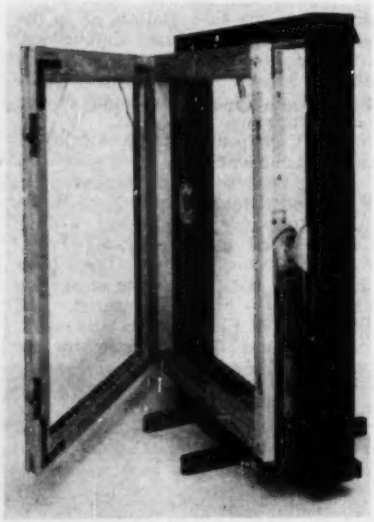
Domestic Window Range (C)

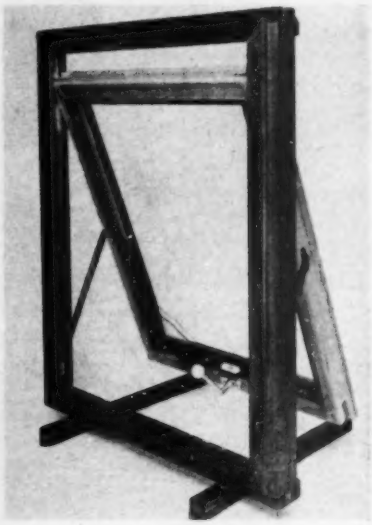
This manufacturer is offering a range of composite domestic windows in which timber is the basic framing medium. The windows are designed to provide satisfactory glazing under all conditions, to give efficiency and durability in service, and to allow freedom for individual conceptions in the use of matching or contrasting grain textures and finishes. All windows in the range embody a universal system of mechanical control and fittings to permit single or multiple glass applications from a basic composite profile. Four types of construction go to make up the range: (1) Type VC, a coupled sash application, with 2½in ventilated cavity insulation by normal glazing methods, for maximum nominal glass substance of ¼in and undivided area of 35 sq ft; (2) Type SC, a single sash application with ½in double sealed dry air cavity insulation, supplied pre-glazed, maximum nominal glass substance of ¼in and undivided area of 25 sq ft; (3) Type S, a single sash application for perfective and normal glazing with single panes or with proprietary sealed glass units to individual manufacturer's instructions; maximum undivided area is 35 sq ft; (4) Type SC2, a single sash application, triple glazed with two double sealed dry air cavities for maximum insulation. The windows may be horizontally or vertically pivot hung, projecting top hung, and bottom or side hung. Fixed lights may be combined with any of these types of opening sash or, alternatively, each may be supplied as an independent unit, available preglazed in a range of selected softwoods, prime quality hardwoods or combinations of both. Illustration shows (left) horizontally pivot hung type VC window in the reversed position for cleaning, and (right) projecting top hung type SC window in normal open position.

J. Honour & Son (Joinery) Ltd., 272 *Kirkdale, London, S.E.*26. *Sydenham* 7614.

Readers' Information Service, Ref. C. Date 24/6/59.

A





C

★

New Coloured Floor Seal

The latest Ronuk product is coloured Ronseal which is intended for the sealing of all cement type floors, unglazed earthenware and quarry tiles, stone and similar materials, and inlaid linoleum. It is claimed to impart a solid, permanent red or green colour with a matt finish, to prevent all dusting up of the floor material, and to provide complete protection against water, dirt and spillages. It can be quickly applied over large areas with a deck scrubber or to small areas with a

Take **ASTOS** the dampcourse

—for permanence, for a toughness that withstands vibration and normal foundation settlement, for easy identification on site. ASTOS, Standard or lead-lined, the original asbestos/bitumen dampcourse, complies with the British Standard requirements (B.S. No. 743, 1951). 24 ft. rolls, in wall widths up to 36 in. Standard (Type 5C) 7-lb. per sq. yd. Lead-lined (Type 5F) 9¼-lb. per sq. yd.

Take Zylex Slaters' Felt as a secondary roof under tiles or slates, to prevent damage due to roof defects, to reduce heat loss. Reinforced Zylex for open rafters, Standard for boarded roofs, and Aluminium Foil Surfaced for even greater reduction of heat loss.
Take ASTOS and ZYLEX for perfect protection and insulation. Specify them together.

For technical literature write to:
THE RUBEROID COMPANY LIMITED 94 COMMONWEALTH HOUSE · 1-19 NEW OXFORD STREET · LONDON WC1

ZA 461

The cheapest central heating there is — SOLID FUEL

Cheapest Running Costs. A new generation of house hunters is insisting on central heating. They regard it as just as much of an essential as the water supply. It's as well then that *solid fuel* central heating has such rockbottom running costs. Look at the figures on the right: *no other fuel* can compare for cheapness with solid fuel.

Low Capital Costs. It's not an expensive business installing a *solid fuel* central heating system. In fact, the recently developed small-pipe system, so perfect for smaller or medium-sized houses or bungalows, is of such low capital cost that central heating can now be put within the reach of a much larger section of the public than ever before. The unobtrusive miniature pipes couldn't be simpler to install.

Free to Architects. "Central Heating for Houses." This 120-page survey of solid fuel central heating outlines the various systems available, from the open-fire-and-back-boiler to the latest small-pipe system. One copy *free*. Additional copies 2/6 each. Write to the Coal Utilisation Council, 3 Upper Belgrave Street, London, S.W.1, for this booklet or any of the following publications: List of Approved Domestic Solid Fuel Appliances, Warmer Homes with Solid Fuel, Fuel Stores for Houses and Flats, Building for Warmth—all free; and for 1/6—Correct Fixing of Domestic Solid Fuel Appliances.

Compare the Running Costs! This table shows typical comparative costs for different fuels. These have been calculated for a 3 bedroom house of some 1000—1,200 square feet and are those of an *average* week's heating and hot water supply during the 30-week heating season. Fuel prices vary, of course, and local costs can easily be calculated from those given. If you would like the data on which these figures are based, write to the Coal Utilisation Council, 3 Upper Belgrave Street, London, S.W.1.

COKE *Sectional Boiler*	**£9 ton**	**21/-**
ANTHRACITE *Gravity Feed Boiler*	**£12 ton**	**20/-**
GAS	**1/5d therm**	**33/1d***
ELECTRICITY	**1d unit**	**45/7d***
OIL *Sectional Boiler Conversion*	**1/5d gallon**	**31/5d**

**Gas and Electricity costs exclude Standing Charge*

NEW PRODUCTS (continued)

paintbrush, is self-levelling and shows no brush marks when dried. In addition it is claimed to be capable of standing up to hard wear for long periods and a high gloss finish and even longer wear can be achieved by applying two or three coats of the new Ronuk Plastic Emulsion over the coloured Ronseal. When it eventually becomes necessary to renew coloured Ronseal, the floor surface should be prepared for resealing by cleaning with Ronuk Cleaning Solvent, white spirit or turpentine and the floor should then be allowed to dry thoroughly. Approx. 2-coat coverage: 25/30 sq yds/gal. It is available in the one-gallon size only. Price: 61s per gal.

Ronuk Ltd., Portslade, Sussex.

Readers' Information Service, Ref. D. Date 24/6/59.

E

New Bulkhead Lighting Fitting (E)

A new surface mounting fitting has recently been added to the Holophane bulkhead lighting range. It is designed for use with a 60W G.L.S. tungsten lamp. The new fitting, catalogue No. F.9785, is suitable for general lighting or where headroom is restricted in passages, basements or tunnels. It is claimed that the robust construction of the fitting enables it to withstand rough usage and variable atmospheric conditions and makes it suitable for use on municipal housing schemes as exterior or interior lighting on access balconies. The body is cast in silicon-aluminium alloy, and a prismatic glass is set in the cover with a concealed hinge. A special seal keeps out dust and moisture. The fitting is finished in light grey (B.S. colour 631) and provision is made for ¾in conduit entry. Weight: 5lb. Dimensions: 8½in dia. by 4in deep.

*Holophane Ltd., Elverton Street, Westminster, London, S.W.*1.

Readers' Information Service, Ref. E. Date 24/6/59.

★

New Solid Fuel Boiler (F)

A smaller version of the Super Thermatic, solid fuel burning, hot water boiler has been added to the Tayco range of domestic boilers. This new model, known as the Tayco Thermatic 25, has been designed by Neville Conder, M.S.I.A., F.R.I.B.A., in conjunction with the manufacturer's technical staff. The boiler has a heat output rating of 25,000 B.Th.U/hr with a continuous rating of 15,000 B.Th.U/hr, and is claimed to be capable of heating a 25/40 gal hot water cylinder or, alternatively, a 30 gal hot water cylinder and 20 sq ft. of heating surface. The boiler body is of Quartic design and is claimed to give high efficiency in the output of hot water. The burning rate is automatically controlled by an adjustable thermostat and other features include a new type of enclosed shaker and dumper grate, together with a deep ashpan. The outer casing is of sheet steel, stove enamelled in the following choice of colours: Chinese white, Devon cream, moonstone blue, April green and pale turquoise. Recommended solid fuel is hard coke ⅝in to 1in, coke No. 3, and anthracite. Overall dimensions: 24½in high by 17⅝in wide at base by 17½in deep. Price: 24gn.

Robert Taylor & Co. (Ironfounders Sales) Ltd., 170/172 *Victoria Street, London, W.*1. *Victoria* 3972.

Readers' Information Service, Ref. F. Date 24/6/59.

★

New Automatic Oil-fired Boiler (G)

A fully automatic oil-fired boiler with an entirely new type of burner has been added to the Redfyre range of boilers. Known as the Centramatic 80, it has a continuous heat rating of 80,000 B.Th.U./hr, and is suitable for domestic central heating. It is a packaged unit, is not dependent on chimney pull for efficient operation and requires no special installation technique. The Centramatic 80 is silent in operation and the water temperature is controlled by an adjustable thermostat. When the water in the circuit drops in temperature the thermostat closes, passing electric current to the oil float valve, the electric ignition device (via fluestat and transformer) and the fan relay. In about 45 seconds the unit operates at maximum output. The ignition device automatically switches off as soon as a flame is established. The boiler continues to operate at maximum output until the water in the heating circuit is raised to the required temperature and then cuts off completely until the water temperature falls, when the same sequence of events is repeated. The water tube boiler is of vertical cylindrical shape and is constructed from heavy gauge mild steel with large diameter flow and return tappings to cater for gravity hot water circulation as well as for small bore. Finish: stove enamelled in hammer grey and maroon. Electrical supply: A.C. only,

F

200-250 V, 50 cycles with a consumption of 35 W. Fuel consumption: 5 pints/hr at high fire. Overall dimensions: 54in high by 22½in dia. Price: £149.

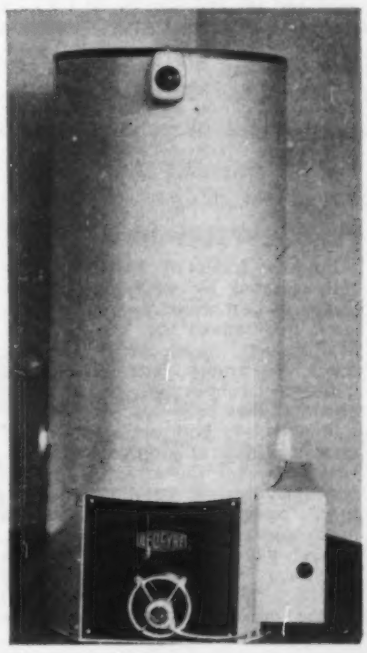
Newton Chambers & Co. Ltd., Thorncliffe, nr. Sheffield. Ecclesfield 3171.

Readers' Information Service, Ref. G. Date 24/6/59.

★

Fluid Hose Coupling For Spray Guns (H)

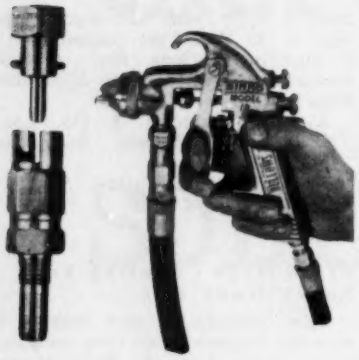
This company is now making a new quick release fluid hose coupling under licence from the Binks Manufacturing Co. of America. The coup-



G

NEW PRODUCTS (continued)

ling is compact and hard-wearing, and its push-and-turn operation is simple and quick. The two principal advantages claimed for the new coupling are, firstly, that it enables the operator to make a rapid change of colours and secondly, the gun can be disconnected without the necessity of blowing back or cleaning out fluid lines. The makers claim that its introduction to the motor industry has solved a production problem created by the enormous increase in the range of colours used today. The coupling consists of two sections, the body assembly which is attached to the fluid hose, and the stem assembly which is connected to the fluid connection of the spray gun. The basic unit comprises an E62 body assembly, with an E60 ¼in B.S.P.T. stem assembly. An alternative stem



H

assembly, the E61 ¼in by 20 T.P.I., is available if required. A fluid hose connector is supplied with the complete coupling. Price: £1 8s 0d, plus 20 per cent. Delivery: ex stock.

Alfred Bullows & Sons Ltd., Long Street, Walsall, Staffs. Walsall 5401.

Readers' Information Service, Ref. H. Date 24/6/59.

★

Folding Vinyl Doors (I)

Folding doors of vinyl, permanently pleated by stiffening material placed in heat-sealed pockets, are the latest addition to the Marley range of products. Space-Savers, as the doors are known, are suitable for industrial, commercial or domestic use, and they may also be used as wall units. In both applications they allow freedom of planning and provide scope for the arrangement and rearrangement of furniture and fittings. Space-Savers are fitted on nylon runners in an overhead track. Special high-impact plastics handles are fitted, whilst a magnetic catch can be supplied as an extra with two of the models. Valance boards in matching vinyl complete the units. Four models, Regal, Princess, Wall-Door and Accordion, are available, and there are 16 standard sizes from 2ft 3in by 6ft 8in up to 8ft by 8ft. If an odd, non-standard width is required, the track has only to be shortened by a few inches, and the height can also be reduced. Purpose-made units can be supplied and the doors can open either from right or left. The only maintenance required is an occasional wash, and it is claimed that Space-Savers are unaffected by heat or moisture. They can be fitted by unskilled labour and all necessary hardware is supplied with each unit. The Princess and the Regal are available in red, green, grey, brown, and beige.

The Marley Group, Sevenoaks, Kent. Sevenoaks 55255.

Readers' Information Service, Ref. I. Date 24/6/59.

★

New Wall Urinal (J)

A new vitreous china wall urinal has been added to the Armitage range of sanitary appliances. The urinal, known as the V3031 Sanus, is a complete unit and may be installed in ranges of any number. There is an integral flushing chamber for cleansing the bowl and the wall-hung arrangement allows a clear floor area, both of which are highly desirable features in an installation of this nature. The Sanus is available in white or any of the Armitage standard range of colours. Nominal overall dimensions: 19in high by 12½in wide by 13½in projection.

Edward Johns & Co. Ltd., Armitage, nr. Rugeley, Staffs. Armitage 253.

Readers' Information Service, Ref. J. Date 24/6/59.

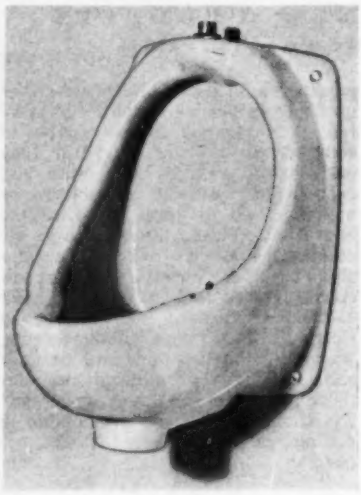
★

New Cement Paint and New Fungicide

Two new additions have been made to the Pudlo range. The first of these is an improved waterproof cement paint which is claimed to possess the following advantages over the makers' previous products: simple mixing, better obliterating power, easier application and good flowability. The paint is available in 14 colours and 56lb of powder will make six gal of paint to cover an average area of 100 sq yd. The second newcomer is a liquid fungicide formulated for the destruction of biological growths such as lichens, moss and fungi on structural building materials. The product can be applied by brush or spray to stone, asbestos, lightweight plasters, fibreboard, plasterboard and brickwork which are susceptible to mould growth when subjected to continual dampness.

Kerner-Greenwood & Co. Ltd., King's Lynn, Norfolk. King's Lynn 2292.

Readers' Information Service, Ref. K. Date 24/6/59.



J

New Heavy Duty Industrial Floor Tiles

This manufacturer has introduced a new industrial floor tile, known as the Diametile, which is designed for use where heavy trucking is encountered. An aggregate is compressed into the cells of a ½in thick honeycomb cast iron 12in by 12in plate, under 400 ton pressure, giving an overall thickness of 1in. The tiles are then cured and ground to a fine, even surface. The aggregate used is a mixture of either aluminous cement or normal hydraulic cement with an imported graded aggregate. The tiles can be laid with ½in sand and cement bed, making a total thickness of 1½in, and can take traffic 24 hours after laying. This factor makes possible the rapid reinstatement of worn or damaged floors.

Jaconello Ltd., Central Avenue, West Molesey, Surrey. Molesey 6011.

Readers' Information Service, Ref. L. Date 24/6/59.

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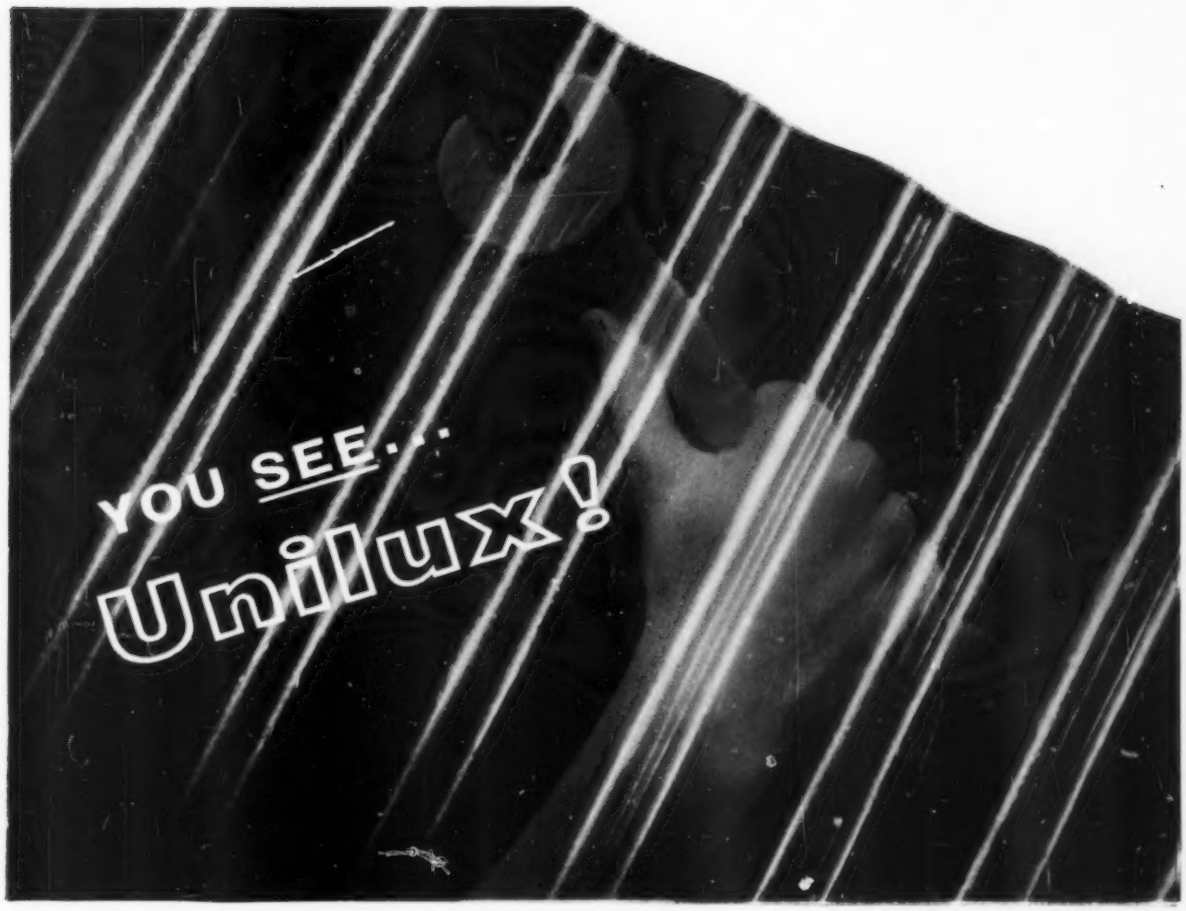

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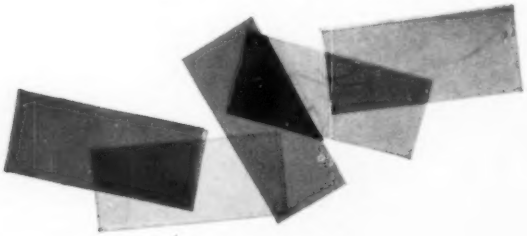

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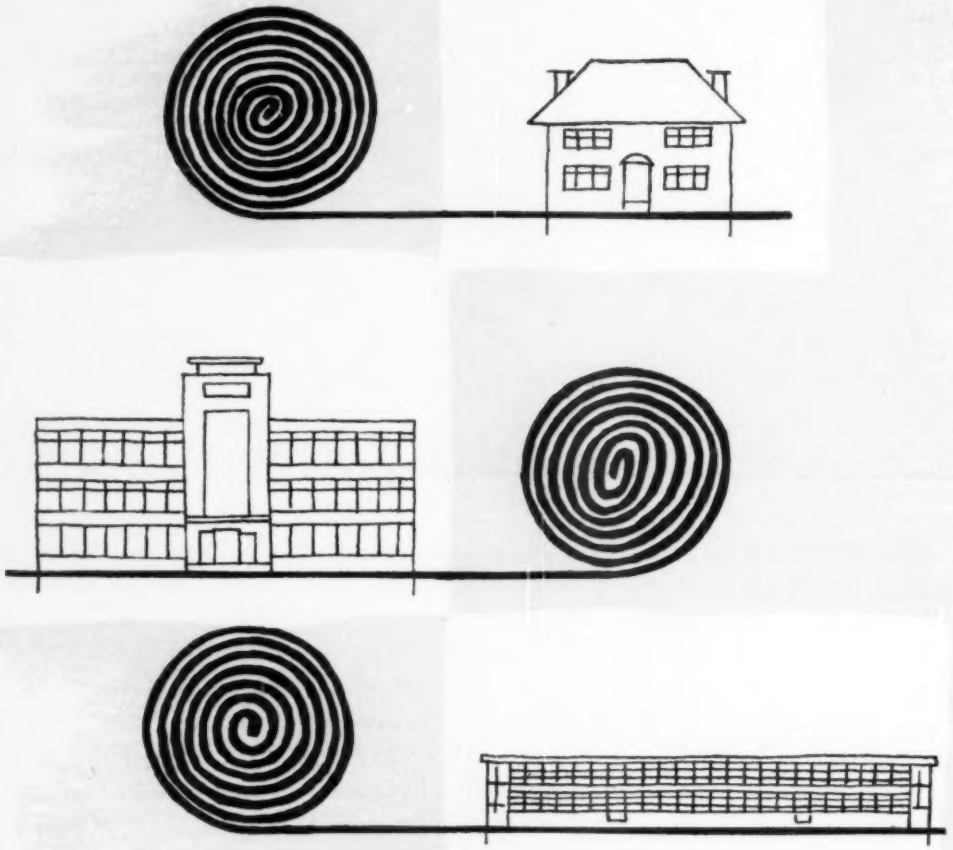

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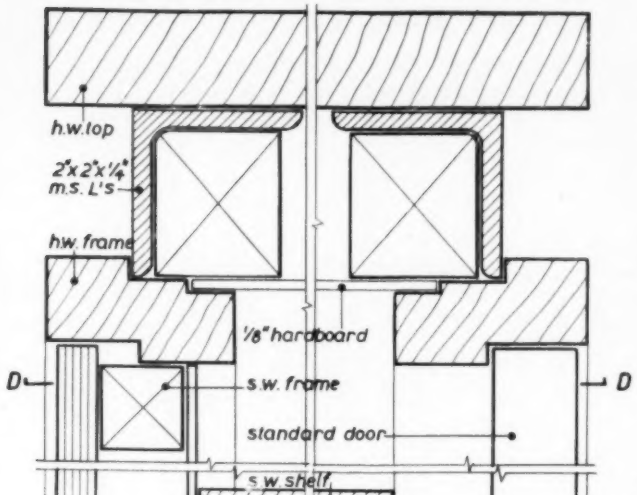
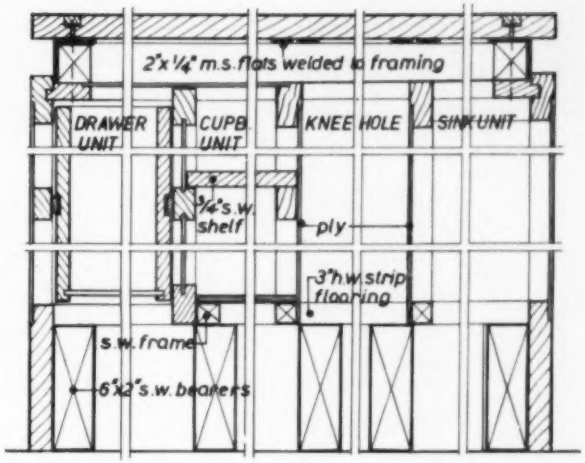
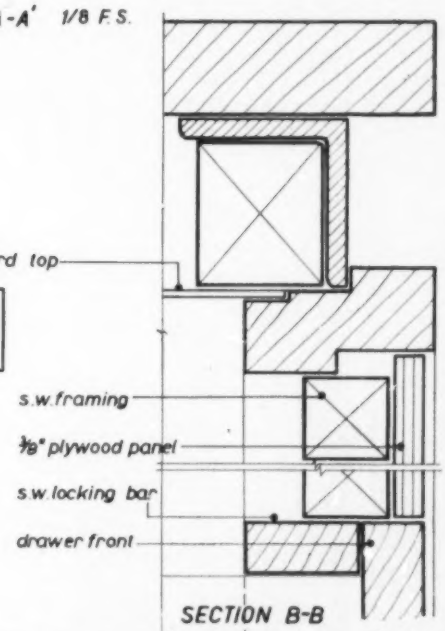


SECTION C-C
1/2 F.S.

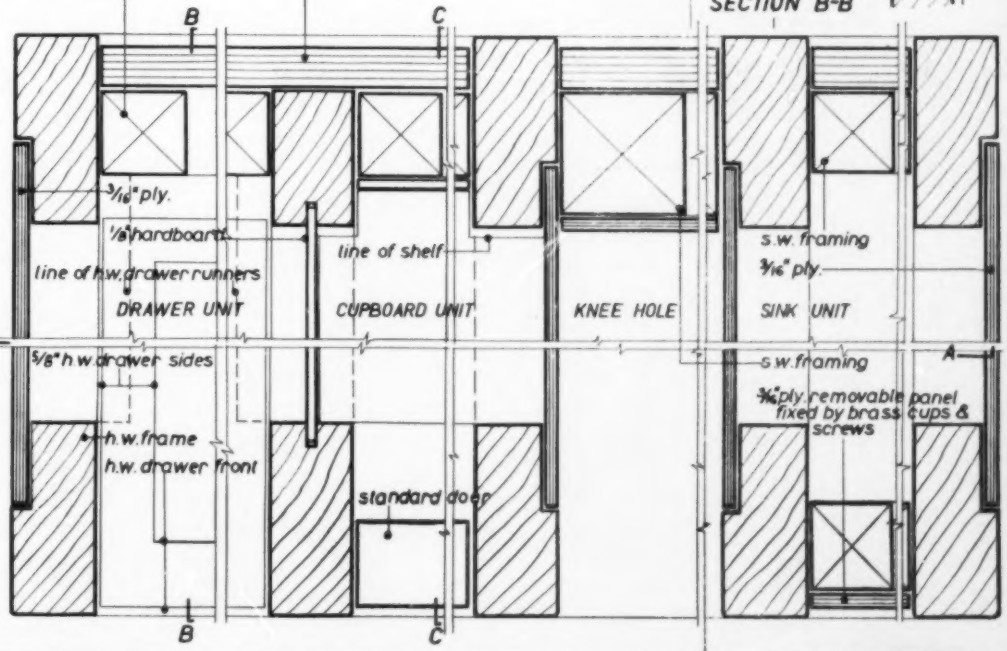
THIS IS A STANDARD UNIT USED IN SCHOOLS & ADAPTED TO SUIT REQUIREMENTS



LONG SECTION 'A-A' 1/8 F.S.



SECTION B-B



PLAN ON D-D 1/2 F.S.

BENCH UNIT. STANDARD DETAIL. SCHOOLS.

RICHARD SHEPPARD, ROBSON & PARTNERS

To avoid repetitive detailing for school fittings, Richard Sheppard, Robson and Partners have produced a standard range of details which can be adapted slightly in finishes and colours in each case. This is a standard laboratory demonstration bench and in this case the bench top is in iroko, twice oiled, the exposed framing, the plywood faces and the veneer to the blockboard door are European white beech, of a constant white colour. All unexposed framing is British Columbian Douglas fir. The exposed steelwork is painted gloss white

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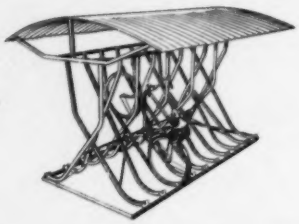
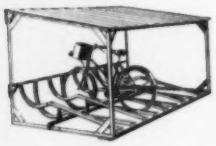
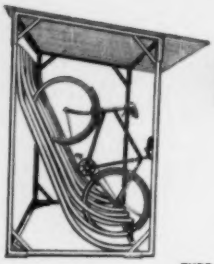

TYPE "B"

IS AN ABIX

CYCLE STAND


TYPE "J"

TO SUIT

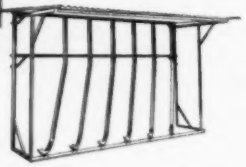

TYPE "A"

EVERY REQUIREMENT

ABIX Cycle Stands are constructed of steel throughout, stove enamelled green. Roof sheeting is normally of galvanized corrugated sheets. If required, sheeting can be supplied in Aluminium or Asbestos.

There are 30 different types from which to choose.

Over a Quarter of a Century's Experience in Cycle Stand Manufacture.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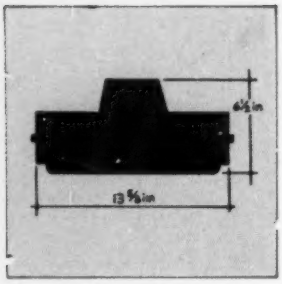
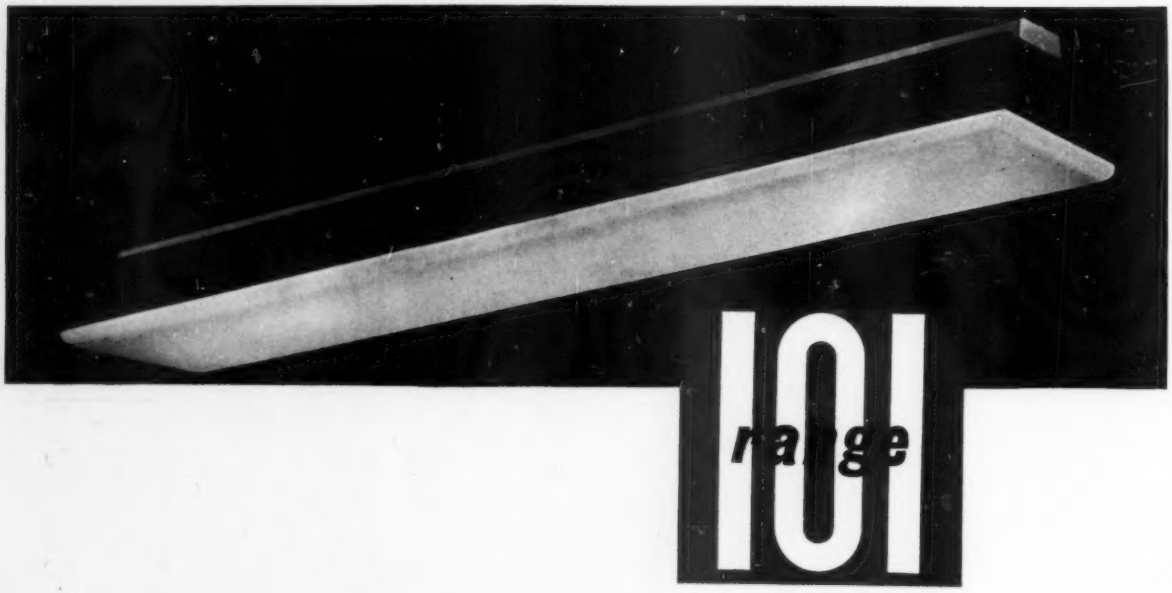


one of many decorative designs

The brilliantly successful G.E.C. 101 range of fluorescent fittings offers a wide choice of designs for every lighting requirement — in executive offices, showrooms, shops and stores, as well as factory areas. They are made for 1½ to 8 ft. single or twin Osram guaranteed tubes, and all employ the famous G.E.C. Basic Channel with its proven advantages of versatility and economy in installation and maintenance.

The fitting illustrated, F41138/9, consists of a standard channel with special wide spacing lampholder assembly, together with a metal frame with applied mahogany finish supporting a 040 "Perspex" diffuser.



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Notes below give basic data of contracts open under locality and authority which are in a bold type. References indicate : (a) type of work (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading (c) deposit (d) last date of application (e) last date and time for submission of tenders. Full details of contracts marked • are given in the advertisement section.

OPEN

BUILDING

AYCLIFFE DEVELOPMENT CORPORATION. (a) Contract 164. Erection of 176 houses, 37 lock-up garages, etc. at Housing Precinct E.4 in the New Town of Newton Aycliffe. (b) A. V. Williams, General Manager, Newton Aycliffe, near Darlington. (c) 2gn. (e) July 6.

* * *

BERKSHIRE C.C. (a) Erection of an ambulance station and two firemen's houses, Shaw estate, Newbury. (b) County Architect, Wilton House, Parkside Road, Reading. (c) 2gn. (e) July 7.

* * *

BOURNEMOUTH B.C. (a) Extensions to the North Cemetery Crematorium, approximate area 2,220 sq ft. (b) Borough Architect's Office, Room 106, Town Hall. (c) 2gn. (e) July 15.

* * *

CARMARTHENSHIRE AND CARDIGANSHIRE Fire Brigade Committee. (a) Erection of a fire station at New Quay, Cardiganshire. (b) County Architect, County Hall, Aberayron. (c) 1gn. (e) July 7.

* * *

CHESTERFIELD R.C. (a) 18 dwellings at North Side, Tupton. (b) Engineer and Surveyor, Rural Council House, Saltergate, Chesterfield. (c) 2gn. (e) July 3.

* * *

CROYDON B.C. (a) Building a new hostel at rear of Queen's Hospital. (b) Borough Engineer. (e) July 15.

* * *

DERWENT R.C. (a) Fixed-price tenders for construction of a reinforced concrete water tower and tank, 69ft high, 100,000 gal capacity, together with ancillary works at Hemingborough, near Selby, East Yorks. Southern Area Water Supply Contract No. 2. (b) Messrs. Fairbank & Son, consulting engineers, "The Gables", 62a Bootham, York. Only contractors with experience of this class of work will be considered. (c) 3gn by cheque payable to Derwent R.D.C. (e) July 1.

* * *

EAST RIDING OF YORKSHIRE C.C. (a) Erection of a three-form entry county secondary school at Filey. (b) County Architect, County Hall, Beverley. (c) £2, cheques made payable to the County Treasurer. (e) July 6.

* * *

EAST SUFFOLK C.C. (a) Alterations and additions to "Cloncurry", Felixstowe. (b) County Architect, County Hall, Ipswich. (d) June 5. (e) July 3.

* * *

EIRE — CORPORATION OF DUN LAOGHAIRE. (a) Dalkey/Killiney Pumped Water Supply Scheme. (1) Tender for Construction of Service Reservoir. (2) Tender for Pumps and Motors. (1) Construction of 300,000 gallon reservoir pumphouse 6in dia rising main, distribution and ancillary works. (2) The supply and installation of three pumping units, two of which are capable of discharging 204 g.p.m. each and of 68 g.p.m. against specified heads. (b) John Simpson, Town Clerk, Town Hall, Ballymena, Co. Antrim. (c) £10. (e) July 7.

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ELECTRICITY BOARD FOR NORTHERN IRELAND. (a) Supply, delivery and erection at Coolkeeragh Power Station, Londonderry, of one complete set of office block heating equipment (steam calorifier (200 p.s.i.) pipework and heaters). (b) Messrs. Kennedy & Donkin, 64 Royal Exchange Manchester, 2. (c) 5gn, cheques to be made payable to the Electricity Board of Northern Ireland. (e) June 30.

* * *

ELECTRICITY BOARD FOR NORTHERN IRELAND. (a) Supply, delivery and erection at Coolkeeragh Power Station, Londonderry, of one set, high-pressure steam (950 p.s.i.f.) and feed (1,500 p.s.i. 375 deg F) pipework and valves. (b) Messrs. Kennedy & Donkin, 64 Royal Exchange, Manchester, 2. (c) 5gn, cheques to be made payable to the Electricity Board of Northern Ireland.

* * *

ELLESMERE PORT B.C. (a) Contract 258. Orchard Farm Estate. 40 traditional houses, eight one-bedroom flats, 27 garages and ancillary works. (b) Borough Engineer and Surveyor, Queen Street. (c) 3gn. (e) June 29.

* * *

ELLESMERE PORT B.C. (a) Contract No. 254. Erection of nine shops, 14 dwellings and 10 garages on North Whitby Estate, part 3. (b) Borough Engineer and Surveyor, Queen Street. (c) 3gn. (e) June 29.

* * *

EXMOUTH U.C. (a) Extensions and alterations to Council Offices, St. Andrew's Road. (b) Engineer and Surveyor, R. J. Humphreys, Council Offices. (c) 3gn. (e) June 30.

* * *

GREAT YARMOUTH B.C. (a) Fixed price tenders for eight aged persons' bungalows, Warden's flat and communal unit, at Addison Road, Gorleston. (b) Borough Engineer's Office. (c) 2gn. (e) July 7.

* * *

HESTON AND ISLEWORTH B.C. (a) Erection of a new works depot (first stage), of offices with flats over and works buildings. (b) Borough Surveyor, 88 Lampton Road, Hounslow. (c) 2gn. (e) July 21.

HAMBLEDON R.C. (a) Erection of ten bungalows at Hazelwood, Elstead (three pairs); Turner's Mead, Chiddingfold (one pair); Glebe Road, Cranleigh (one single); Windhurst Road, Cranleigh (one single). (b) Engineer and Surveyor, Council Offices, Bury Fields, Guildford. (c) 2gn, by cheque, payable to Hambledon Rural District Council, crossed "Lloyds Bank", sent to the Treasurer at the Council Offices. (e) July 6.

* * *

HUNTINGDONSHIRE C.C. (a) Fixed price tenders for erection of a secondary modern school at Orton Longueville. (b) S. M. Holloway, A.R.I.B.A., County Architect, County Buildings, Huntingdon. A panel of contractors will be selected. (d) June 26. (e) August 22.

* * *

ISLE OF ELY C.C. (a) Firm-price tenders for erection of a junior occupation centre at Money Bank, Wisbech. (b) County Architect, County Hall, March, Cambs. (c) 2gn by cheque payable to Isle of Ely County Council. (e) July 20.

* * *

ISLE OF WIGHT C.C. (a) Alterations and extensions at Newport Priory secondary girls' school, Nodehill, Newport. (b) County Architect, County Hall, Newport, I.o.W. (c) 3gn, made payable to Isle of Wight County Council. (e) July 13.

* * *

MIDDLESBROUGH B.C. (a) Two-storey extension to St. Anthony's R.C. Secondary School, Town Farm. (b) Director of Education, Education Offices, Woodlands Road, Middlesbrough. (c) 5gn from firms selected to tender. (d) June 25. (e) July 17.

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NEWCASTLE UPON TYNE C.C. (a) Erection of 27 flats in three storeys at Scotswood Road (Noble Street) redevelopment scheme, stage 3. (b) City Architect, 18 Cloth Market, Newcastle upon Tyne 1. Application in writing. (e) July 9.

* * *

NORTH RIDING OF YORKSHIRE C.C. (a) Alterations and adaptations at Upsall Hall, near Nunthorpe, Middlesbrough, to provide an industrial occupation centre. (b) County Architect, County Hall, Northallerton. (c) 2gn. (e) July 6.

* * *

OAKENHOLT, FLINTSHIRE. (a) Erection of a church hall at Oakenholt. (b) E. Watkin Williams, chartered architect, 26 Halkyn Road, Flint. (c) 2gn. (e) July 7.

* * *

P.C.C. OF ST. LUKE AND ST. MARK, WINCHESTER. (a) Erection of a new parish church at Stanmore, in traditional construction. (b) C. W. T. Evans, A.R.I.B.A., Wolvesey Palace, College Street, Winchester. (d) June 27. Contractors are asked to give particulars of similar works undertaken.

* * *

SALFORD C.C. (a) Bowls pavilion at Ordsall Park, Trafford Road. (b) City Engineer and Surveyor's Department, Town Hall, Salford 3. (c) 2gn. (e) July 1.

* * *

SALFORD C.C. (a) Fixed-price tenders. Alterations to Frederick Road bus depot. (b) City Engineer and Surveyor's Department, Town Hall, Salford 3. (c) 3gn. (e) July 1.

* * *

SALFORD C.C. (a) Public conveniences at David Lewis Recreation Ground. (b) City Engineer and Surveyor's Department, Town Hall. (c) 2gn. (e) July 1.

* * *

SCUNTHORPE B.C. (a) Construction of one three-storey block of 60 single-person's one-bedroom flats and nine garages at Ashby Road. (b) Borough Surveyor, Laneham Street, Scunthorpe. (c) 2gn. (d) June 26.

* * *

SHREWSBURY B.C. (a) Demolition works and erection of four flats with four maisonnettes over on a reinforced concrete pier and beam foundation with outbuildings and site works at Frankwell. (b) Borough Surveyor, Guildhall. (c) 2gn. (e) July 17.

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ST. HELENS B.C. (a) Erection of a two-storey block of flats, at Sutton Manor. Traditional construction. (b) Architectural Office. 3 Cotham Street, St. Helens. (c) 2gn. (e) July 6.

* * *

STOCKPORT B.C. (a) Erection of 51 dwellings at Brinnington. (b) Borough Architect, Town Hall. (d) May 28. (e) July 6.

* * *

STOKE-ON-TRENT B.C. (a) Erection of the College of Physics and Chemistry at North Staffs Technical College. Two blocks six-storeys high, totalling 50,000 sq ft. (b) J. R. Piggott, F.R.I.B.A., City Architect, Kingsway Chambers, Stoke-on-Trent. (d) June 5. (e) July 6.

* * *

SUFFOLK AND IPSWICH FIRE AUTHORITY. (a) Erection of a fire station of approximately 2,000 sq ft floor area at Stowmarket, together with demolition of existing building. (b) Architect to the Authority, Mr E. J. Cunliffe, A.R.I.B.A., County Hall, Ipswich. (c) 2gn. (e) July 6.

* * *

ULSTER — BALLYMENA B.C. (a) Erection of 21 three-storey flats complete with site works at Larne Road for Ballymena Borough Council. (b) John Simpson, Town Clerk, Town Hall, Ballymena, Co. Antrim. (c) 5gn. (e) July 2.

* * *

ULSTER—DOWN C.E.C. (a) Erection of a new primary school at Ballystockart Comber for Down County Education Committee. (b) Messrs. W. H. Stephens & Sons, 13 Donegall Square North, Belfast. (c) 3gn. (e) June 25.

* * *

ULSTER—NEWTOWNARDS. (a) Erection of a church hall for the committee of Greenwell Street Presbyterian Church. (b) Office of the Secretary, J. W. Russell, 4 High Street, Newtownards. (c) 3gn. (e) June 30.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

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CORNWALL C.C. (1) County Secondary School. (2) Newquay. (3) Rogers & Christian Ltd., 80a Tower Road, Newquay. (1) Extensions to Girls' Grammar School. (2) Penzance. (3) R. Hosken, Chywoone Hill, Newlyn, Penzance.

* * *

DERBYSHIRE C.C. (1) Secondary school. (2) Darley Dale, Matlock. (3) J. W. Wildgoose & Sons Ltd., Industrial Works, Matlock.

* * *

HEBBURN CO. DURHAM U.C. (1) 61 houses. (2) Toner Avenue. (3) Direct labour. (4) £72,041.

* * *

NOTTS. C.C. (1) First instalment of Arnold and Carlton College of Further Education. (3) M. D. Sweeney & Palmer Ltd., Beechdale Road, Aspley, Nottingham. (4) £199,747.

* * *

R.C. DIOCESE OF LANCASTER. (1) Erection of St. Bede's R.C. Secondary School. (2) Lytham St. Annes. (3) Hardmans (Builders) Ltd., Best Street, Kirkham, Lancs.

* * *

RUGBY B.C. (1) Erection of municipal offices and town hall. (3) J. Parnell & Son Ltd., Oliver Street, Rugby. (4) £163,920.

* * *

SEAHAM U.C. (1) 104 houses. (2) Eastlea estate. (3) L. W. Evans Ltd., 18 Norfolk Street, Sunderland. (1) 46 houses and flats. (2) Central area. (3) L. W. Evans Ltd. (1) 54 houses. (2) Mission site. (3) Direct labour.

* * *

SOUTH SHIELDS. (1) Block of offices for Sunderland and South Shields Water Co. Ltd. (2) Market Place. (3) Richard Costain Ltd., 16 Great North Road, Newcastle-on-Tyne.

* * *

SWINTON AND PENDLEBURY B.C. (1) 86 dwellings. (2) Clifton estate. (3) Direct labour. (4) £117,138.

* * *

WESTMINSTER. (1) Seven-storey block of flats, with a four-storey block at the rear. (2) Grosvenor Square, W.1. (3) Token Construction Co. Ltd., 78 Mount Street, London, W.1.

* * *

WOLVERHAMPTON. (1) Erection of a new church of the Epiphany. (2) Lymeer Road, Oxley. (3) Jenks Builders Ltd., 82 Stafford Street, Wolverhampton.

* * *

WORTHING B.C. (1) Laboratory, etc. (2) High school for girls. (3) Field Place (Builders) Ltd., Peacock House, Goring Road, Goring-by-Sea. (4) £12,087.

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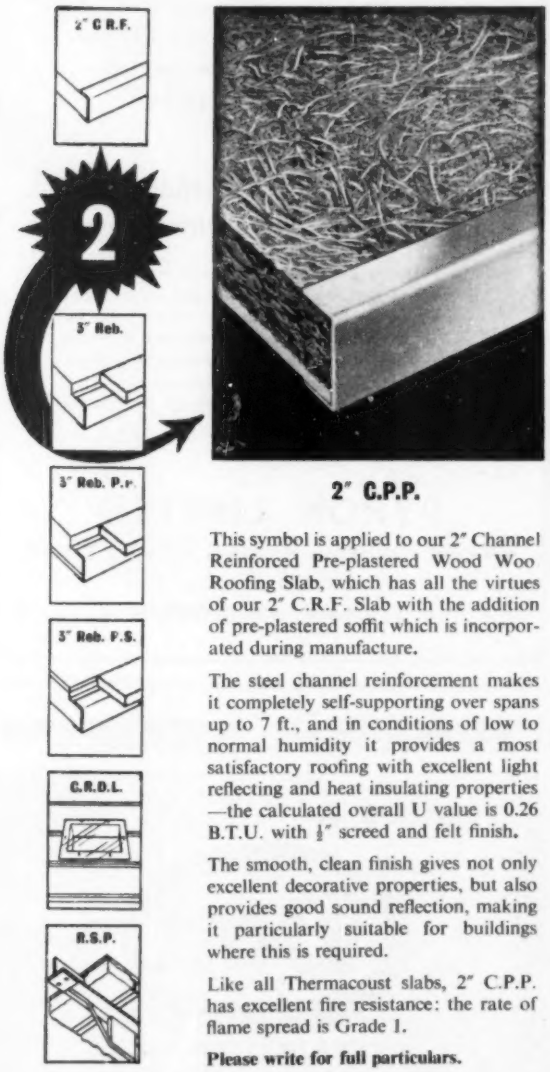

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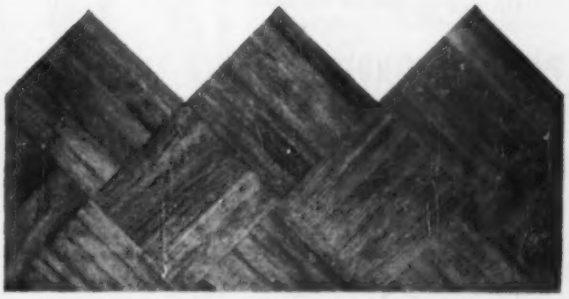

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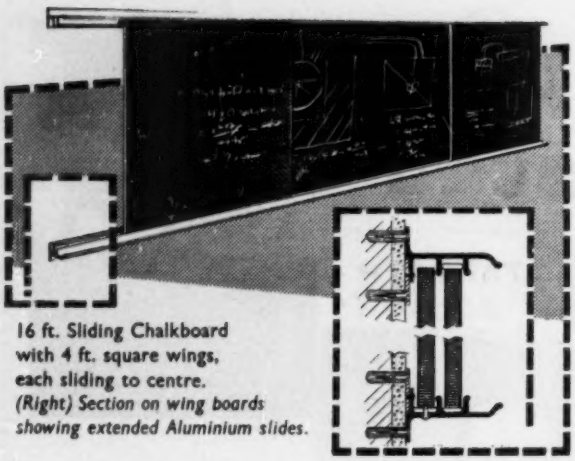

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APPLICATIONS are invited for established posts within the grades shown:

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Applicants must have passed the intermediate examination of the Institution of Municipal Engineers, or hold equivalent qualifications. The successful applicant will be engaged on the preparation of Sewer Surveys, Drainage Area Plans and Flood Relief Schemes, etc.

b. **District Building Inspector.** APT II £766/£880).

Applicants must have experience in all classes of building work and possess the Building Inspector's Certificate of the Institution of Municipal Engineers.

c. **Architectural Assistant.** APT I (£610/£765).

Applicants must have had experience in the preparation of plans, specifications, etc., including the maintenance of public buildings.

A London Weighting Allowance of £10-£30 per annum according to age will be paid in addition to the above salaries.

Housing accommodation will be provided in appropriate cases if required by the successful candidate for post (a), and successful candidates will be considered for loans to enable them to purchase houses if necessary.

Saturday mornings are normally free of duty.

Application forms, returnable by June 30, 1959, from H. Deryck Peake, M.Sc.(Eng.), M.I.C.E., Borough Engineer and Surveyor, "Percy House," 7 Little Park Gardens, Enfield, Middx.

CYRIL E. C. R. PLATTEN,
Town Clerk.

Public Offices,
Enfield, Middx. [5271

The University of Manchester

APPLICATIONS are invited for the post of Lecturer in Architecture from candidates with professional membership of the Royal Institute of British Architects and not less than three years of practical experience. Salary on a scale from £900 to £1,650 per annum; initial salary according to qualifications and experience. Membership of the F.S.S.U. and Children's Allowance Scheme. Applications should be sent, not later than July 1, 1959, to the Registrar, the University, Manchester, 13, from whom further particulars and forms of application may be obtained. [5272

Borough of Scunthorpe
CLERK OF WORKS

APPLICATIONS are invited for the temporary appointment of Clerk of Works for the new Municipal Offices and Council Suite.

It is expected that building operations will commence towards the end of 1959 with an anticipated contract period of two years.

Salary £1,000 per annum.

Applications with full details of qualifications, past experience and age, together with the names and addresses of two referees must reach the undersigned not later than Monday, July 6, 1959.

T. M. LISTER,
Town Clerk.

Municipal Offices,
34 High Street,
Scunthorpe.
June 8, 1959. [5282

Norfolk Education Committee

APPLICATIONS are invited for the post of Assistant Architect. Salary in accordance with the Special Grade, £785/£1,070.

Candidates should be qualified architects and have experience in the planning and erection of large buildings.

Forms of application from the undersigned to be returned within 14 days of the date of this advertisement.

F. LINCOLN RALPHS,
Chief Education Officer.

County Education Office,
Stracey Road,
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APPLICATIONS

State age and full details of training and experience to Chief Architect, Ministry of Works, (C) Room 435, Abell House, John Islip Street, London, S.W.1. Interview in London. [5287

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County Borough of Blackpool

APPLICATIONS (by July 8, 1959) invited for:

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Draughtsman, Miscellaneous III (£525/£590 p.a.).

Forms, etc., from Arthur Hamilton, B.Sc., A.R.I.B.A., Borough Surveyor, P.O. Box 17, Municipal Buildings, Blackpool. [5411

Borough of Rhondda

APPLICATIONS are invited for the post of Assistant Architect. Salary within Special Grade (£750 x £40—£1,030). Applicants must be Associates of the R.I.B.A., with a sound general experience of Municipal housing work.

The commencing salary in the grade will be dependent of candidate's previous experience.

The appointment will be terminable by one month's notice on either side, and will be subject to the National Scheme of Conditions of Service. The successful candidate will be required to pass a medical examination and will contribute to the council's superannuation fund.

Housing accommodation will be provided for a successful married applicant.

Applications on forms to be obtained from the housing architect, Mr. C. Gingell, A.R.I.B., A.R.I.C.S., 13 Ystrad Road, Pentre, Rhondda, accompanied by two recent testimonials, are to be sent to the undersigned, in plain envelopes endorsed "Assistant Architect", so as to arrive not later than Friday, July 3, 1959.

(Sgd.) E. D. WILDE,
Town Clerk.

Council Offices,
Pentre,
Rhondda. [5405

Basildon Development Corporation
Department of Architecture and Planning

APPLICATIONS are invited for the following appointments:

(a) **Senior Architect,** Grade APT XI £1,527/£1,755.

(b) **Architect,** Grade VIII/IX £1,163/£1,485.

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Applications on the special form (obtainable from the Chief Architect/Planner) must be sent to the General Manager, Basildon Development Corporation, Clifford House, Basildon, Essex, by Friday, 10th July, 1959. Envelopes to be endorsed with the post applied for. [5402

London County Council

ARCHITECTURAL ASSISTANTS required up to £860 (at present under review). Full and interesting programme of houses, flats, schools and general buildings. Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council, AR/EK/43/59 County Hall, S.E.1 (923). [0166

County Borough of East Ham
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Grade I—£610/£765

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A subsistence allowance may be granted over a reasonable period to the person appointed if unable to obtain suitable housing accommodation, necessitating the maintenance of two homes.

Further details and application forms returnable by July 10, 1959, from the Town Clerk, Town Hall, E.6. [5409

Chorley Rural District Council
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APPLICATIONS are invited for this appointment at a salary in accordance with Grades APT I and II of the National Scale (£610/£880) depending upon qualifications and experience.

The appointment is superannuable and subject to the National Scheme of Conditions of Service, and to one calendar month's notice on either side.

Applications giving personal particulars, details of training and experience, and naming two referees must reach me by July 20, 1959.

DAVID CLARKSON,
Clerk of the Council.

Council Offices,
Gillibrand Street,
Chorley. [5403

London County Council
ARCHITECTS
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Aycliffe Development Corporation
(New Town of Newton Aycliffe)
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Applications giving details of age, qualifications, education and experience to reach the undersigned by Saturday, July 4, 1959.

A. V. WILLIAMS,
General Manager.

Newton Aycliffe,
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Co. Durham. [5393

Government of Eastern Nigeria
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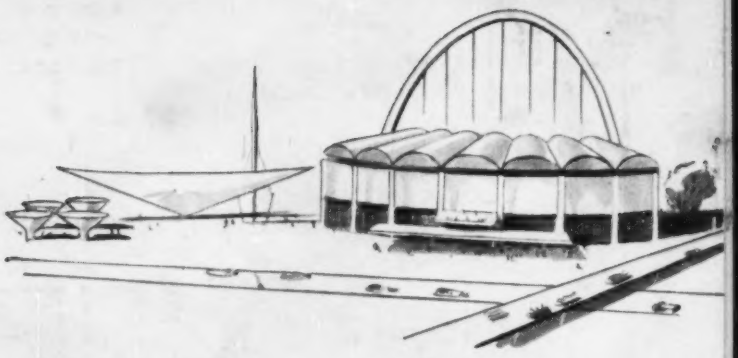

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